STUDY OF SUICIDE ATTEMPTS IN

SCHIZOPHRENIA

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In part fulfillment of the requirements for

M.D. (PSYCHIATRY)

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CERTIFICATE

This is to certify that the dissertation titled, "STUDY OF SUICIDE ATTEMPTS IN SCHIZOPHRENIA" is the bonafide work of Dr.M.S.JAGADEESAN, in part fulfillment of the requirements for M.D. Branch – XVIII (Psychiatry) examination of The Tamilnadu Dr.M.G.R. Medical University, to be held in March 2007. The period of study was from April 2006 to September 2006.

The Director
Institute of Mental Health,
Chennai – 10.

The Dean
Madras Medical College
Chennai – 3.

DECLARATION

I, Dr.M.S.JAGADEESAN, solemnly declare that the dissertation titled, “STUDY OF SUICIDE ATTEMPTS IN SCHIZOPHRENIA”, is a bonafide work done by me at the Institute of Mental health, Chennai, during the period from April 2006 to September 2006 under the guidance and supervision of Dr.M.Murugappan. M.D., D.P.M., Professor of Psychiatry, Madras Medical College.

The dissertation is submitted to The Tamilnadu Dr.M.G.R. Medical University towards part fulfillment for M.D. Branch XVIII (Psychiatry) examination.

Place:

Date: Dr.M.S.JAGADEESAN.

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INDEX

INTRODUCTION

Schizophrenia is a chronic disease characterized by remissions and exacerbations. It reduces the life expectancy of those afflicted by approximately 10 years, and suicide accounts for the majority of premature deaths among patients suffering from schizophrenia. Suicide is the most devastating possible outcome of a schizophrenic illness. In addition to the finality for the patients, suicide has an intense and long-lasting impact on families, other patients, and professional staff (Allebeck 1989, Black et al 1985).

The risk of suicide in schizophrenia exceeds that of all psychiatric disorders other than major depression (Asnis et al). The rate of suicide in schizophrenia has been reported to be some 20-50 times greater than suicide rate in general population (Black 1988). It has been found that 20% to 40% of patients suffering from schizophrenia make suicide attempts. The completed suicide rate in schizophrenia ranges from 9% to 12.9% (Tsuang et al 1980). Approximately 1% to 2 % of patients suffering from schizophrenia who attempt suicide are reported to complete suicide within a year after their initial attempt, with an additional 1% doing so each year thereafter (Vanessa Raymont).

Suicide attempts are associated with protracted, non-regressive symptomatology, the majority occurring before 30 years of age. Chronicity, incapacity and complaints of social isolation even though they are not being abandoned, are characteristic of those who die by suicide.

Suicide attempts in individuals with schizophrenia are serious, typically requiring medical attention. Intent is strong and the majority of those who attempt make multiple attempts, having a higher rate of more lethal methods (Radomsky et al).

Risk factors including previous attempts are however found to be having limited value in the prediction of eventual suicide and traditional risk scales are considered ineffective (Heila et al, 1997).

There has been a paucity of Indian studies on this subject which promoted us to take up this study.

In this study, we have tried to find differences in the groups of suicide attempters and non-attempters in schizophrenia in search for a possible recognition of risk factors. The question looming large is: **“IS THERE PREVENTION?”**

REVIEW OF LITERATURE

Edwin Shneidman defined suicide as “the conscious act of self-induced annihilation, best understood as a multidimensional malaise in needful individual who defines an issue for which the act is perceived as the best solution”.

Kay Redfield Jamison said “The suffering of the suicidal is private and inexpressible, leaving family members, friends, and colleagues to deal with an almost unfathomable kind of loss, as well as guilt. Suicide carries in its aftermath a level of confusion and devastation that is, for the most part, beyond description.”

The word suicide is derived from the Latin word for “self-murder.” If successful, it is a fatal act that represents the person’s wish to die. There is a range, however, between thinking about suicide and acting it out. Some persons have ideas of suicide that they will never act upon, some plan before acting and others take their lives seemingly on impulse, without premeditation (Kaplan).

Almost 95% of all people who commit or attempt suicide have a diagnosable mental disorder. The rate is highest in affective disorder and somewhat lower, but still excessive, among people suffering from schizophrenia. Substantial morbidity associated with suicidal behaviors is also characteristic of schizophrenia. At some time during the course of illness, as many as half of all patients with schizophrenia have been reported to experience suicidal ideation and/or to have made suicidal attempts (Asnis).

The recognition of risk factors for suicide is one element of prediction and prevention. The design of effective suicide prevention strategies hinges on the identification of risk factors characteristic of the individual or group, the strength of the causal relationships between the risk factor and the disease and the alterability of that causal risk factor.

The factors defining those patients with schizophrenia at relatively high risk for suicide have been comprehensively reviewed (Vanessa) and can be divided into those which are shared with other clinical populations and those which are unique to schizophrenia.

As summarized by Caldwell and Gottesman:

Shared risk factors include:

1. Male gender
2. Ethnicity (White)
3. Social isolation
4. Depression or depressed mood
5. Hopelessness
6. Past history of suicide attempts
7. Family history of suicide
8. Unmarried
9. Unemployed
10. Deteriorating health with good premorbid functioning
11. Recent loss or rejection
12. Childhood parental loss
13. Limited external support
14. Family stress.

Risk factors unique to schizophrenia include:

1. Age and gender profile (young and male)
2. Chronic illness with numerous exacerbations
3. High psychopathology and impairment at discharge
4. Realistic awareness of illness
5. Fear of further deterioration
6. Excessive treatment dependence or loss of faith in treatment

SOCIO-DEMOGRAPHIC PROFILE

Schizophrenia is a disease with relatively early onset in the life chart of an individual and factors like suicide are likely to appear during the period of peak incidence. Brian and colleagues found that 83% of people suffering from schizophrenia who killed themselves did so before the age of 30 years. In another study of schizophrenic suicides by King, the mean age of death was 33.4 years, significantly lower than that for other patient groups. Data from record linkage studies indicate that, with increasing age, people suffering from schizophrenia are at a decreased risk for suicide.

The ratio of men to women who commit suicide in the general population is approximately 4:1, whereas the ratio among those suffering from schizophrenia seems somewhat narrower. A male to female ratio of suicides with schizophrenia is said to be 3:2, whereas Vanessa reported only slightly higher rates among men than women with the disorder. Brier and colleagues have described more violent suicides in male schizophrenics compared to females. It may be that suicides in males suffering from schizophrenia are more impulsive than in women and hence to a lesser extent preceded by a suicidal process. Also in males there is a two fold increase in risk for suicide among those with history of alcohol abuse. In addition age at suicide appears to vary by gender among persons with schizophrenia. The mean age at death among males suffering from schizophrenia is approximately 10 to 12 years younger compared to women. The difference seems to likely reflect the earlier onset of schizophrenia in men and a similar duration of illness at the time of suicide by men and women.

MARITAL STATUS

Marital status was not related to suicide among men, but was strongly related to suicide among women suffering from schizophrenia with an almost ten-fold relative risk among those unmarried, divorced or widowed. Females suffering from schizophrenia in general are more likely to have intact marriages. A study by Radomsky et al found that being separated or divorced did not confer a higher risk for suicide attempts in persons suffering from schizophrenia, as it does in general population. However a lack of regular contact with a significant other was more important than marital status alone for evaluating the risk of suicide in patients with psychosis.

SUBSTANCE USE

The incidence of alcoholism in patients suffering from schizophrenia is higher than general population. Also alcohol abuse is a well known risk factor for suicide in general. However the presence of alcoholism has been shown to distinguish suicide completers from schizophrenic controls in some studies (Allebeck et al, 1986). A study conducted by Bartels et al did not support a strong relationship between alcohol use and suicidal behavior in schizophrenia. One possible explanation is that because people with schizophrenia having alcohol related problems have less alcohol use than patients with primary alcoholism, alcohol use in schizophrenia may be less likely to induce depression and suicidal behavior. Similarly mixed results have been reported for association between suicide and other drug-use disorders.

DEPRESSION IN SCHIZOPHRENIA

Affective disorder is strongly correlated with suicide in people suffering from schizophrenia. Secondary depression follows diminution of psychotic symptoms in 25% of patients suffering from schizophrenia and 60% suffer a major depressive episode at some point in their illness.

People suffering from schizophrenia who exhibit suicidal behavior, both attempts and completions, are found to have significantly more depressive symptoms. The association between depression and prior suicide attempts in individuals with schizophrenia persists into a period of relative remission. This suggests that patients with a history of attempted suicide are more likely to demonstrate depressive symptoms in future. Also depression levels are higher at the time of relapse when positive symptoms are at their highest (Green et al).

Hopelessness defined as negative expectations about the future may be an important factor in accounting for the link between suicide and depression. According to Beck, hopelessness has been shown to co-relate with suicidal intent, and subsequent suicide.

There is a high level of subjective distress reported by patients suffering from schizophrenia who attempt suicide (Cohen et al). The subjective distress experienced by these patients may go unrecognized by their clinicians perhaps ascribed to psychosis or neuroleptic treatment rather than a distinguishable affective syndrome per se.

INSIGHT

Suicide may emerge from a non-delusional but acutely painful awareness of the illness process, negative expectations of the future, depleted self-esteem, severe disappointment over failed expectations, awareness of gradual deterioration of abilities, despair & dissatisfaction with results of treatment and as a final response to a chronic deteriorating illness (Virkkunen et al). Awareness of particular aspects of illness maybe more demoralizing than awareness of other aspects. Awareness of having delusions, flat affect, anhedonia and asociality may be particularly damaging to one's self concept and degree of hopefulness about future. Particular aspects of awareness of illness are associated with greater suicidality while others are not. This suggests that general awareness of illness is not always associated with greater hopelessness and suicidality. In addition poor awareness is generally associated with non-compliance with treatment and poor functioning (Amador et al, 1993).

PREMORBID FUNCTIONING

People suffering from schizophrenia with a higher premorbid functioning are at a greater risk for suicide. Having formed socially congruent expectations for their future, following the onset of illness they become desperate about its chronicity, progression and global impact on their lives (Black et al, 1985).

ILLNESS SUBTYPE

Negative symptoms, when present as a prominent component of illness, are associated with a significantly lower long-term risk of suicide among patients with schizophrenia (Fenton et al, 1991). The progressive loss of social drive, the diminished capacity to experience affect and the indifference towards the future associated with deficit symptoms although often markedly disabling, may preclude the painful self-awareness associated with suicide.

Paranoid schizophrenia and its characteristic positive symptoms, suspiciousness and delusions, are associated with an elevated long-term risk of suicide, significantly greater than that of disorganized and undifferentiated schizophrenia. A good premorbid functioning, late illness onset, preservation of affect & cognitive capacities, intermittent course associated with non-deficit and paranoid subtypes of schizophrenia encompass many of the preconditions for the emergence of dysphoric and hopeless states.

PAST SUICIDE ATTEMPTS

A past history of suicide attempts is common in completed suicides in schizophrenia. The number of previous attempts has been stated to be the most important single variable associated with the outcome. Allebeck noted this association to be especially strong among women. Many theorists regard suicide as a form of aggression, the outward expression of which may presage self-destruction.

If less than 2 years have elapsed since the last attempt, the risk is increased and when the first attempt is made before 25 years of age, repetition is almost inevitable.

COURSE OF ILLNESS

It was found that more than 80% of first suicide attempts which occurred after the onset of psychosis were within the first 5 years of illness, suggesting that the risk of suicidal behavior is highest during the initial years after the onset of schizophrenia (Jill Harkavy, 1999). Others have found that suicide occurs after many years of illness. Drake et al postulated that the long and chronic character of the disease and concomitant feelings of despair are causal factors for suicide.

It is also reported that compared with non-suicidal schizophrenics, suicide completers had more frequent psychiatric hospitalizations. A gradual onset of illness over time may also place people suffering from schizophrenia at risk for suicide. According to Kaplan a large proportion of suicides among those suffering from schizophrenia occurred during discharge or within the first month after discharge.

STRESSFUL LIFE-EVENTS

Stressful life events such as separation or divorce from spouse, perceived or real abandonment by parents, broken relationship with significant other, re-hospitalization or discharge, change in therapists, and loss of job have been found to precede depression and suicide in people suffering from schizophrenia. Drake et al found that most frequent life events prior to completed suicide in schizophrenia were after leaving the hospital and loss of support from family. However study by Modestin and colleagues on suicide completers reported no difference between normal controls and those with schizophrenia in the number of antecedent life events.

NEURO-BIOLOGICAL FACTORS

A substantial and rapidly expanding body of literature indicates an association between suicidal behavior and alteration in a range of neurochemical parameters. Although relatively few studies have specifically examined the association of serotonergic function with suicidal behavior in schizophrenia, serotonin's putative role in the pathogenesis of schizophrenia indicates the need for further study in this area. People suffering from schizophrenia who made violent suicide attempts have been shown to have significantly lower CSF 5-HIAA levels than non-suicidal patients according to Van Praag. Patients with schizophrenia demonstrate abnormalities of EEG in sleep, reduced rapid eye movement (REM) latency, increased REM duration, decreased slow-wave sleep, impaired sleep maintenance and sleep efficiency. On comparing suicidal and non-suicidal patients with schizophrenia, it was found that those with suicide attempts had significantly greater REM activity. It has been postulated that sleep EEG changes may be predictive for suicide in this population.

PREVENTION AND MANAGEMENT

Suicidal behavior needs multi-determined approach in schizophrenia. Even if the treatment focus is on risk assessment with regard to planning, persistence and potential lethality, treatment should be multifaceted including pharmacotherapy, non-pharmaco therapeutic interventions, manipulation of the treatment milieu, hospitalization, improvement of crisis services, enhancement of family environment and social support network (Vyas N Ahuja).

Although often suicide among people suffering from schizophrenia seems beyond the reach of preventive measure, there are two main ways of minimizing the risk and reducing the total suicide rate in schizophrenia. Intensive therapeutic measures should be initiated during the initial and non-regressive phases of illness in all young subjects who give suicide warnings. In chronic incapacitated patients, surveillance should be increased in times of personal crises and impending environmental changes.

PHARMACOTHERAPY

The close association between suicidal behavior and affective symptomatology in patients suffering from schizophrenia underscores the need for effective diagnosis and treatment of depressive illness. Clinicians must remain especially alert so as not to confuse acute phase or post psychotic depressive symptomatology with antipsychotic side effects and must ensure that appropriate anti-depressant therapy is initiated. Hopelessness may be an especially important marker for the need to treat depressive symptoms aggressively. Though negative symptoms and the deficit syndrome may be associated with reduce risk of suicide in schizophrenia, the presence of these conditions may mask a clinically significant depressive syndrome (Fenton et al).

Conventional anti-psychotics exert their effect by blocking dopamine receptors in the brain and diminished dopaminergic neurotransmission. This has been associated with suicidal behavior in depressed patients (Roy, Karoum et al). Antipsychotics also increase the ratio between metabolites of dopamine (homovanillic acid) and serotonin (5-hydroxy-indole-acetic acid) in cerebrospinal fluid (Kahn et al). Low levels of cerebrospinal fluid 5-hydroxy-indole-acetic acid have been found to predict high suicide risk in patients suffering from schizophrenia.

However Meltzer et al observed that the use of clozapine significantly reduced the risk of suicide in treatment resistant schizophrenia. Clozapine induced decrease in suicide may be related to the relief of depression and positive symptoms, as well as the development of more optimistic view about prognosis. Also improvement in psychopathology, tardive dyskinesia, cognitive functions, social functioning, length of hospitalization, and overall quality of life may reduce suicidal behavior.

BEHAVIORAL AND PSYCHOSOCIAL TREATMENT

Drake and colleagues underscored the value of empathetic support in diminishing suicide risk. They advised that the clinician's should acknowledge the patients despair, address his or her losses and help establish new accessible goals and tasks. Families can provide support, prevent social isolation and maintain a stable acceptable environment, as key components of psychosocial treatment. A cognitive approach may be useful in helping the patient recognize suicidal urges and address them with the help of the clinician, helped by a close patient therapist relationship. Rehabilitative measures and supportive therapeutic contacts must be established. Symptoms of depression, anxiety ad hopelessness should be closely monitored and when crises occurs hospital re-admission should be considered.

AIMS AND OBJECTIVES

The following were the aims and objectives of our study:

1. To study the frequency of suicide attempts in schizophrenia.
2. To compare the clinical and socio-demographic profile of patients suffering from schizophrenia with and without suicide attempts.
3. To study the various risk factors of suicide attempts in patients suffering from schizophrenia.
4. To study the relationship of severity, type and duration of schizophrenic illness in patients with and without suicide attempts.
5. To study the characteristics of suicide attempters in schizophrenia.

HYPOTHESIS

We had generated the following null hypothesis in our study:

1. There is no significant difference in age and gender between suicide attempters and non-attempters.
2. There is no significant difference in educational qualification between suicide attempters and non-attempters.
3. There is no significant difference in occupational status, socioeconomic status, and marital status between suicide attempters and non-attempters.
4. There is no significant difference in the type of family between suicide attempters and non-attempters.
5. There is no significant difference between suicide attempters and non-attempters in relation to family history of mental illness or suicide.
6. There is no significant difference in severity of psychopathology between suicide attempters and non-attempters.
7. There is no significant difference in the duration of schizophrenic illness between suicide attempters and non-attempters.
8. There is no significant difference in depressive features between suicide attempters and non-attempters.
9. There is no significant difference between various sub-types of schizophrenia in relation to suicide attempts.

METHODOLOGY

The study was carried out in The Institute of Mental Health, Chennai.

SAMPLE

100 consecutive patients suffering from schizophrenia based on ICD-10 diagnostic criteria attending the outpatient department for treatment.

INCLUSION CRITERIA

1. Patients diagnosed as suffering from schizophrenia based on the ICD – 10 diagnostic criteria.
2. Patients on medication for their schizophrenic illness within a year of onset of symptoms.
3. Patients who have been on regular medication from the time of diagnosis.
4. The age of a patient at the onset of illness should have been more than 16 years.

EXCLUSION CRITERIA

1. Substance use disorder.
2. Organic condition.
3. Patients who could not be evaluated by meaningful conversation due to severe psychotic excitement.

STUDY DESIGN

The study is a cross sectional descriptive study.

MATERIALS USED

1. Semi-structured proforma.
2. SAPS (Scale for the assessment of positive symptoms)
3. SANS (Scale for the assessment of negative symptoms)
4. CDSS (Calgary Depression rating scale for schizophrenia)
5. Beck's Suicide intent scale.

- A **Semi-structured Proforma** to include the socio-demographic data, family history, duration & type of disorder, treatment history and details of suicide attempt if present (Appendix 1).
- Clinical interview for diagnosis of schizophrenia using **ICD 10** criteria.
- **SAPS** (Scale for the Assessment of Positive Symptoms) and **SANS** (Scale for the Assessment of Negative symptoms) were used. These scales were sourced from the University of Iowa Press, 1983. These scales are used for assessment of positive and negative symptoms, principally those occurring in schizophrenia. Both the instruments are used in a way complimentary to each other. They have been widely used in many studies and well tested for reliability and validity. The SAPS contains 35 items divided into 5 domains i.e. Hallucinations, Delusions, Bizarre behavior, Positive formal thought disorder and Inappropriate affect. The SANS contains 24 items divided into 5 domains i.e. Affective flattening or blunting, Alogia, Avolition-apathy, Anhedonia-asociality and Attention. Items in both the scales are score between 0 (none) and 5 (Severe). (Appendix 2 & 3)

- **CDSS** (The Calgary Depression rating Scale for Schizophrenia) was used. The CDSS had been specifically developed by Drs. D. and J. Addington at the University of Calgary for assessing the level of depression in schizophrenia, separate from positive symptoms, negative symptoms and extra pyramidal symptoms. It has been extensively evaluated in both relapsed and remitted patients and appears sensitive to change. In comparison to the Hamilton Depression Scale, it has fewer factors and less overlap with positive and negative symptoms. It is an observer scale, semi-structured, administered by goal directed interview. It has 9 items rated from 0 to 3. The CDSS depression score is obtained by adding each of the item scores. A score above 6 has 82% specificity and 85% sensitivity for predicting the presence of a major depressive episode. The scale has good construct validity, both internal and inter-rater reliability. (Appendix 4)
- **Beck's Suicide intent scale** was used to assess the intent of the suicide attempt. It was developed by Beck et al in 1975. This is a scale which assesses the objective circumstances related to suicide as well as self report. There are 8 items in the objective questionnaire and 7 items in the self-report questionnaire. Each item is scored between 0 and 2 with a total score ranging from 0 to 30. (Appendix 6)

Consecutive patients fulfilling ICD 10 criteria for schizophrenia were evaluated in the review OPD department of the Institute of Mental Health, Chennai in April 2006. Patients were approached without knowledge of whether they had a history of suicide attempt. 100 consecutive patients satisfying the inclusion and exclusion criteria were taken into the study. The diagnosis was obtained from case records and re-confirmed by 2 psychiatrists, one of them a senior consultant.

Informed consent in a written form was obtained for participation in the study from the patients as well as the relatives. (Appendix 5)

The patients were administered the Semi-structured proforma, Scale for the Assessment of Positive Symptoms (SAPS), Scale for the Assessment of Negative Symptoms (SANS), The Calgary Depression rating Scale for Schizophrenia (CDSS) and Suicide intent scale for patients with a history of suicide attempt. The scales were applied at the time of study, measuring the current status and not at the time of suicide attempt. For those with more than one attempt, rating was done for all using suicide intent scale and the attempt with the highest intent was taken for analysis.

The data collected thus were tabulated and discussed with reference to the aims and objectives of the study. Statistical analysis was done using the chi-square test and the unpaired t-test.

Approval was obtained from the Ethics committee of the Institute of Mental Health, Chennai.

RESULTS

TABLE NO 1 : FREQUENCY OF SUICIDE ATTEMPT IN THE STUDY POPULATION

Suicide Attempt	Frequency	Percent
Yes	27	27
No	73	73
Total	100	100

Suicide attempt frequency – 27 %	**95 % CI = 19 – 37 %**

In the study population 27 % had attempted suicide while 73 % did not have a history of suicide attempt.

FIGURE 1.

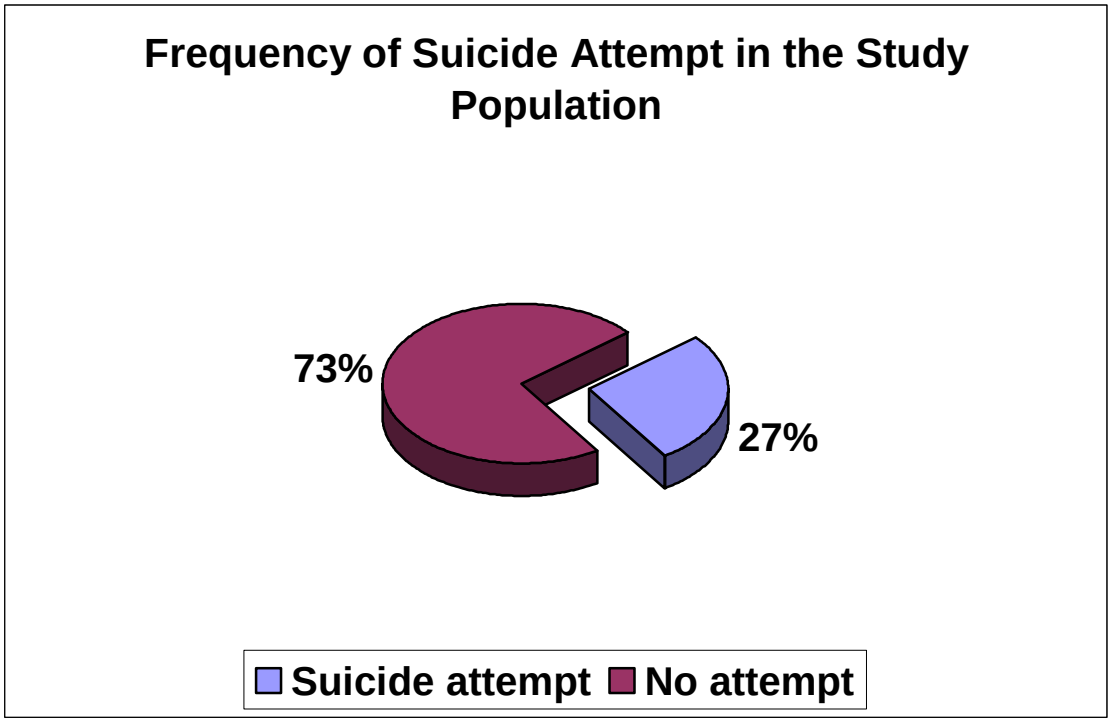


TABLE NO. 2 : AGEWISE COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS

Age in years	Suicide attempt				Total
	Yes		No		
	n	%	n	%	
< 21	0	0	3	4.1	3
21-30	13	48.2	34	46.6	47
31-40	11	40.7	22	30.1	33
41-50	3	11.1	11	15.1	14
51-60	0	0	3	4.1	3
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	3.12	0.54	Not significant

Out of the study group who attempted suicide, none were below 21 years, 48.2 % were between 21 and 30 years, 40.7 % were between 31 and 40 years, 11.1 % were between 41 and 50 years, and none between 51 and 60 years. Among the patients who did not attempt suicide, 4.1% were below 21 years, 46.6 % were between 21 and 30 years, 30.1 % were between 31 and 40 years, 15.1 % were between 41 and 50 years, and 4.1 % were between 51 and 60 years. This difference was not statistically significant.

FIGURE 2.

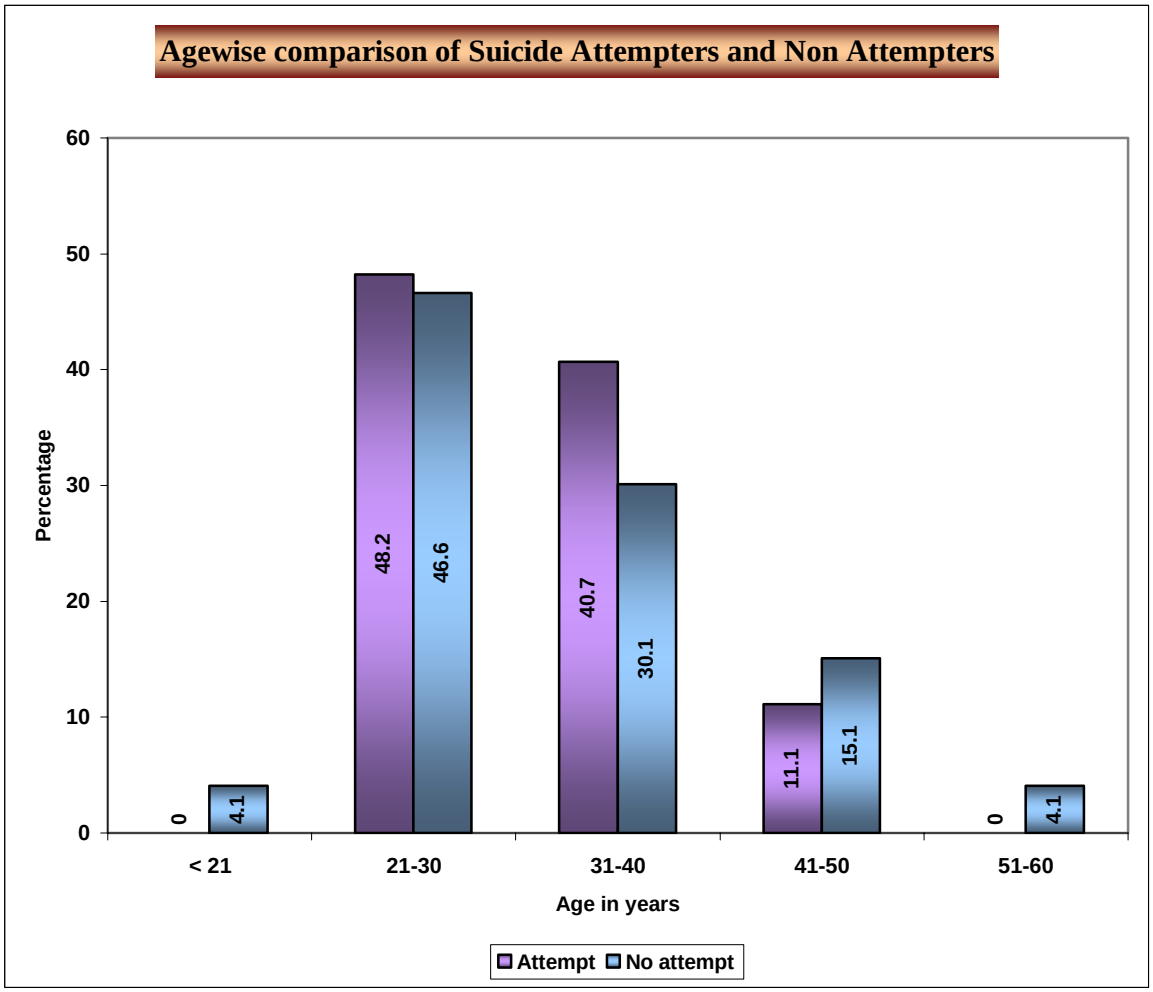

Agewise comparison of Suicide Attempters and Non Attempters
60
50
40
30
20
10
0
Percentage
0
4.1
48.2
46.6
40.7
30.1
11.1
15.1
0
4.1
< 21
21-30
31-40
41-50
51-60
Age in years
Attempt
No attempt

TABLE NO. 3 : GENDERWISE COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS

Gender	Suicide attempt				Total
	Yes		No		
	n	%	n	%	
Male	21	77.8	51	69.9	72
Female	6	22.2	22	30.1	28
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	0.61	0.43	Not significant

Among the group of suicide attempters, 77.8 % were males and 22.2 % were females. In the non-attempters group 69.9 % were males, while 30.1 % were females. This difference was not statistically significant.

FIGURE 3.

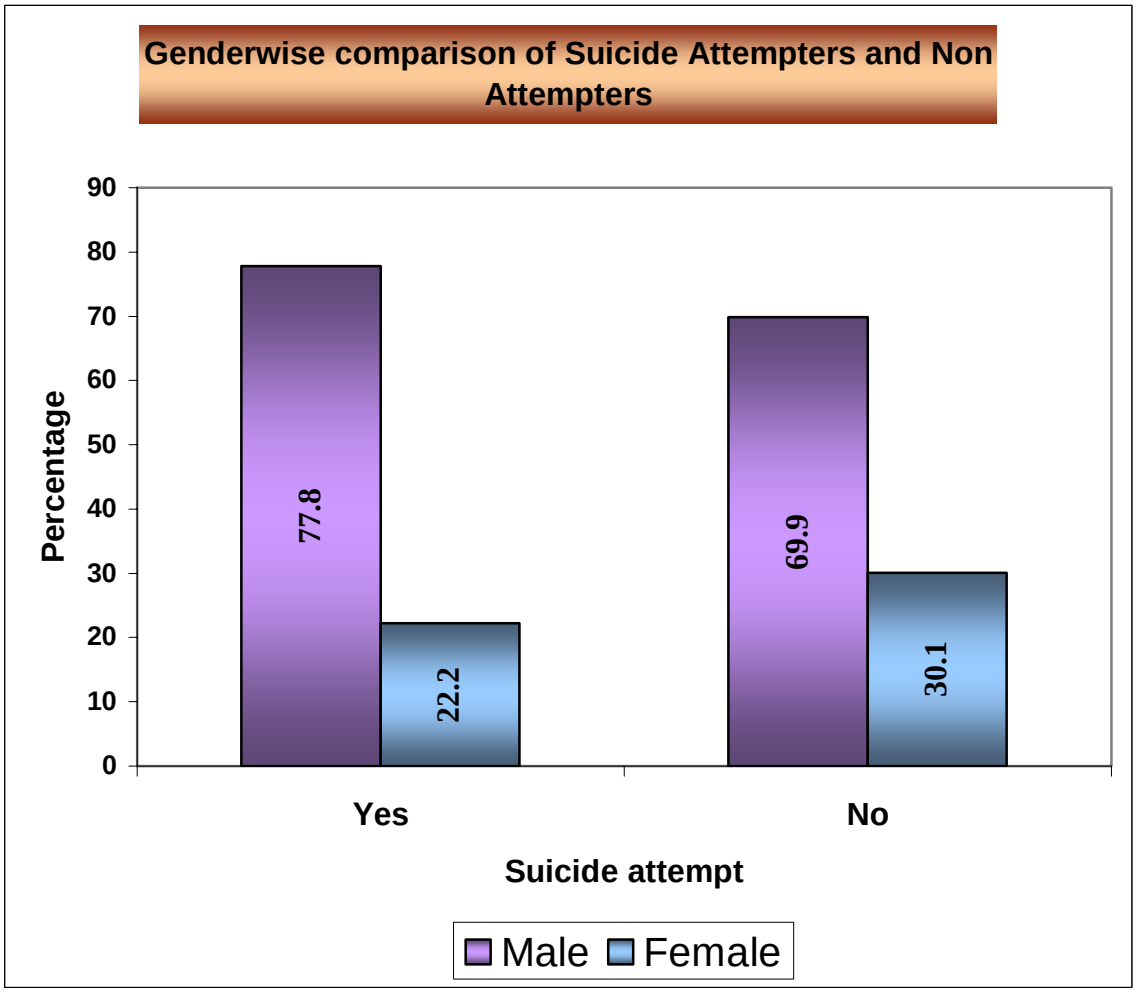

Genderwise comparison of Suicide Attempters and Non Attempters
Percentage
90
80
70
60
50
40
30
20
10
0
77.8
22.2
69.9
30.1
Yes
No
Suicide attempt
Male
Female

TABLE NO. 4 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY EDUCATION

Education	Suicide Attempt				Total
	Yes		No		
	n	%	n	%	
Illiterate	3	11.1	8	11	11
Primary	7	25.9	13	17.8	20
Secondary	6	22.2	21	28.8	27
High School	2	7.4	11	15.1	13
Higher Sec	6	22.2	15	20.5	21
Graduate	3	11.1	5	6.8	8
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	2.32	0.80	Not significant

Among the suicide attempters group, 11.1 % were illiterate, 25.9 % were educated upto primary level, 22.2 % upto secondary level, 7.4 % upto high school, 22.2 % upto higher secondary, while 11.1 % were graduates. In the group of non-attempters, 11 % were illiterates, 17.8 % were educated upto primary level, 28.8 % upto secondary level, 15.1 % upto high school, 20.5 % upto higher secondary, while 6.8 % were graduates. The difference was not statistically significant.

FIGURE 4.

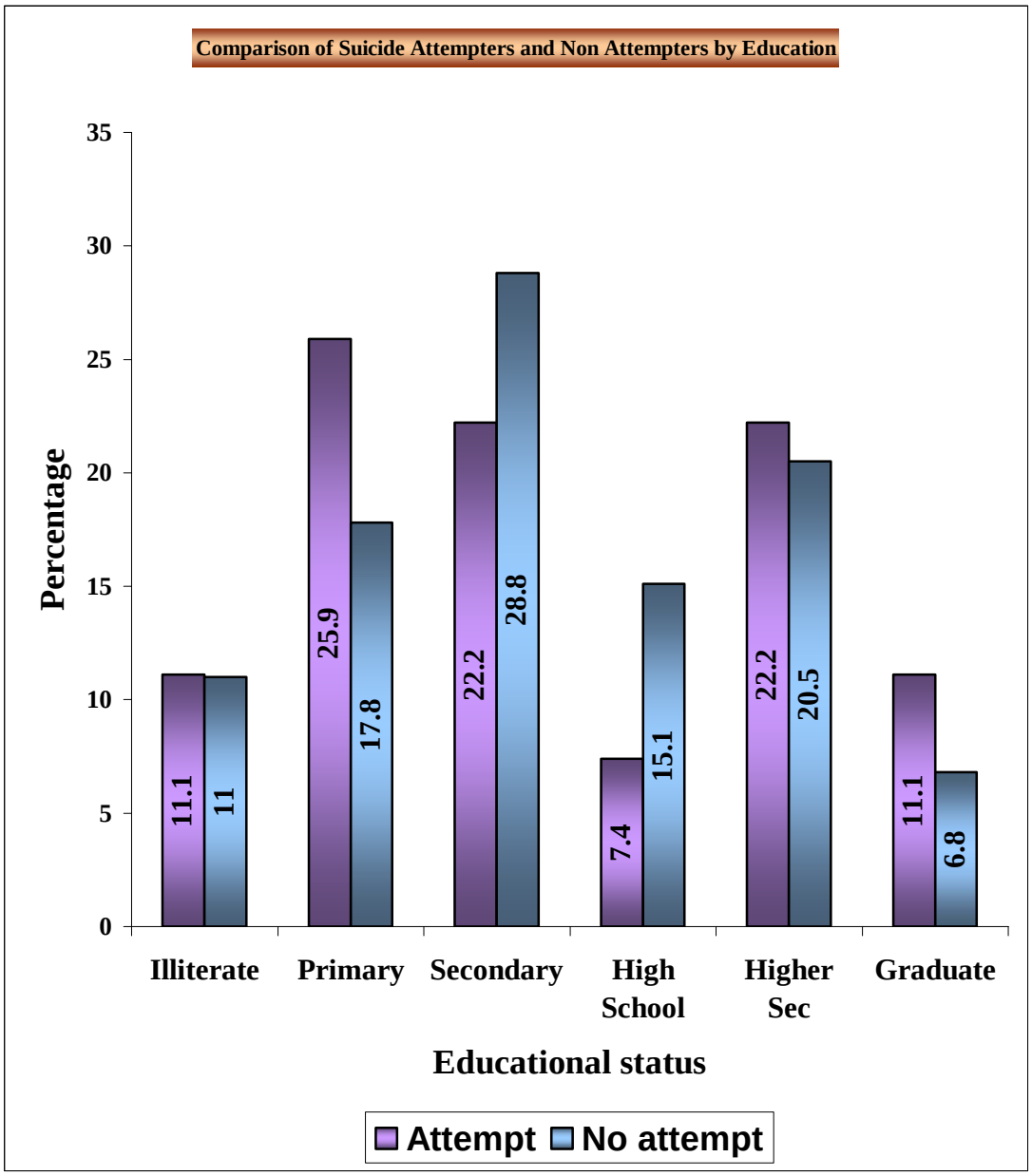

Comparison of Suicide Attempters and Non Attempters by Education
35
30
25
20
15
10
5
0
Percentage
11.1
11
25.9
17.8
22.2
28.8
7.4
15.1
22.2
20.5
11.1
6.8
Illiterate
Primary
Secondary
High School
Higher Sec
Graduate
Educational status
Attempt
No attempt

TABLE NO. 5 : COMPARISON OF THE SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY OCCUPATION

Occupation	Suicide attempt				Total
	Yes		No		
	n	%	n	%	
Housewife	4	14.8	12	16.4	16
Skilled	3	11.1	1	1.4	4
Unskilled	12	44.4	33	45.2	45
Unemployed	8	29.6	27	37.0	35
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	5.02	0.17	Not significant

In the group which attempted suicide, 14.8 % were housewives, 11.1 % were in skilled jobs, 44.4 % were in unskilled jobs, and 29.6 % were unemployed. In the non-attempters group 16.4 % were housewives, 1.4 % were in skilled jobs, 45.2 % were in unskilled jobs, while 37 % were unemployed. The difference was not statistically significant.

FIGURE 5.

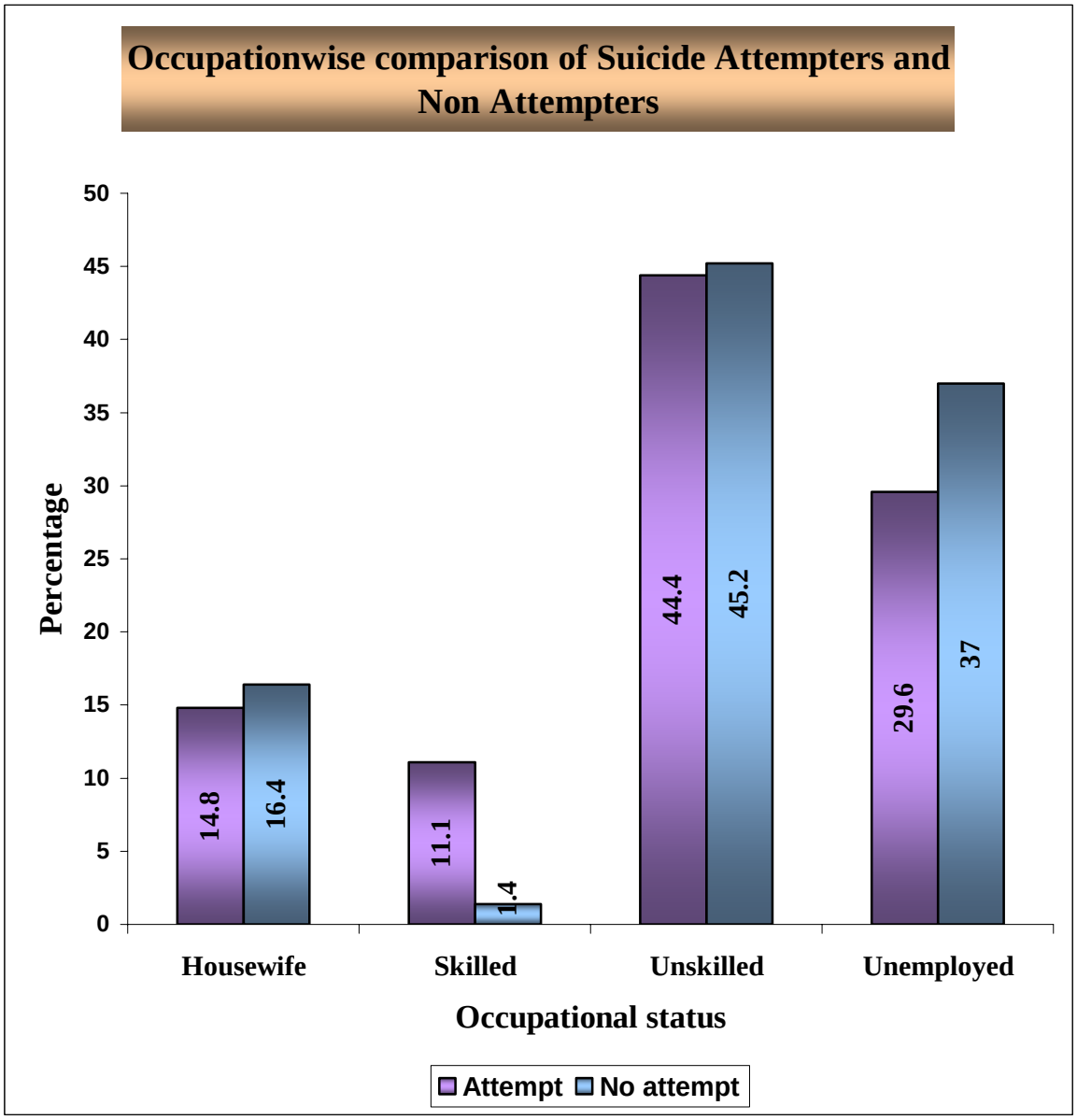

Occupationwise comparison of Suicide Attempters and Non Attempters
Percentage
50
45
40
35
30
25
20
15
10
5
0
14.8
16.4
11.1
1.4
44.4
45.2
29.6
37
Housewife
Skilled
Unskilled
Unemployed
Occupational status
Attempt
No attempt

TABLE NO. 6 : COMPARISON OF THE SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SOCIOECONOMIC STATUS

SE Status	Suicide attempt				Total
	Yes		No		
	n	%	n	%	
Low	20	74.1	60	82.2	80
Middle	6	22.2	12	16.4	18
High	1	3.7	1	1.4	2
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	1.07	0.59	Not significant

Out of the group which attempted suicide, 74.1% were from lower socio-economic group, 22.2 % were from middle socio-economic group, and 3.7 % belonged to higher socio-economic group. In the non-attempters group, 82.2 % were from lower socio-economic group, 16.4 % were from middle socio- economic group, while 1.4 % belonged to higher socio-economic group. The difference was not statistically significant.

FIGURE 6.

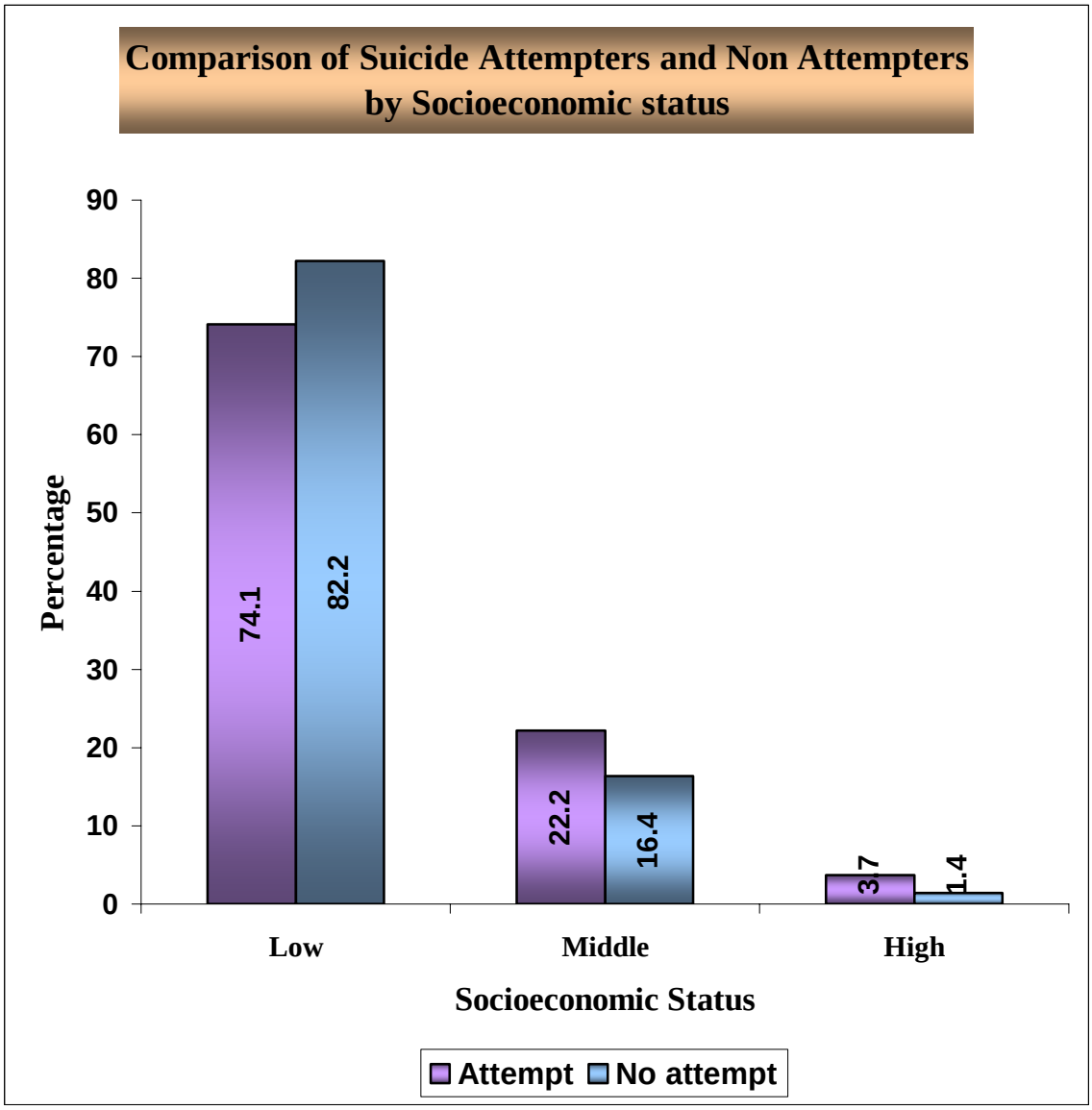

Comparison of Suicide Attempters and Non Attempters by Socioeconomic status
Percentage
90
80
70
60
50
40
30
20
10
0
74.1
82.2
22.2
16.4
3.7
1.4
Low
Middle
High
Socioeconomic Status
Attempt
No attempt

TABLE NO. 7 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY MARITAL STATUS

Marital Status	Suicide Attempt				Total
	Yes		No		
	n	%	n	%	
Married	11	40.7	26	35.6	37
Unmarried	12	44.4	41	56.2	53
Separated	1	3.7	5	6.8	6
Divorced	3	11.1	1	1.4	4
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	5.65	0.13	Not significant

In the group which attempted suicide, 40.7 % were married, 44.4 % were unmarried, 3.7 % were separated, and 11.1 % were divorced. Among the non-attempters group 35.6 % were married, 56.2 % were unmarried, 6.8 % were separated, while 1.4 % were divorced. The difference was not statistically significant.

FIGURE 7.

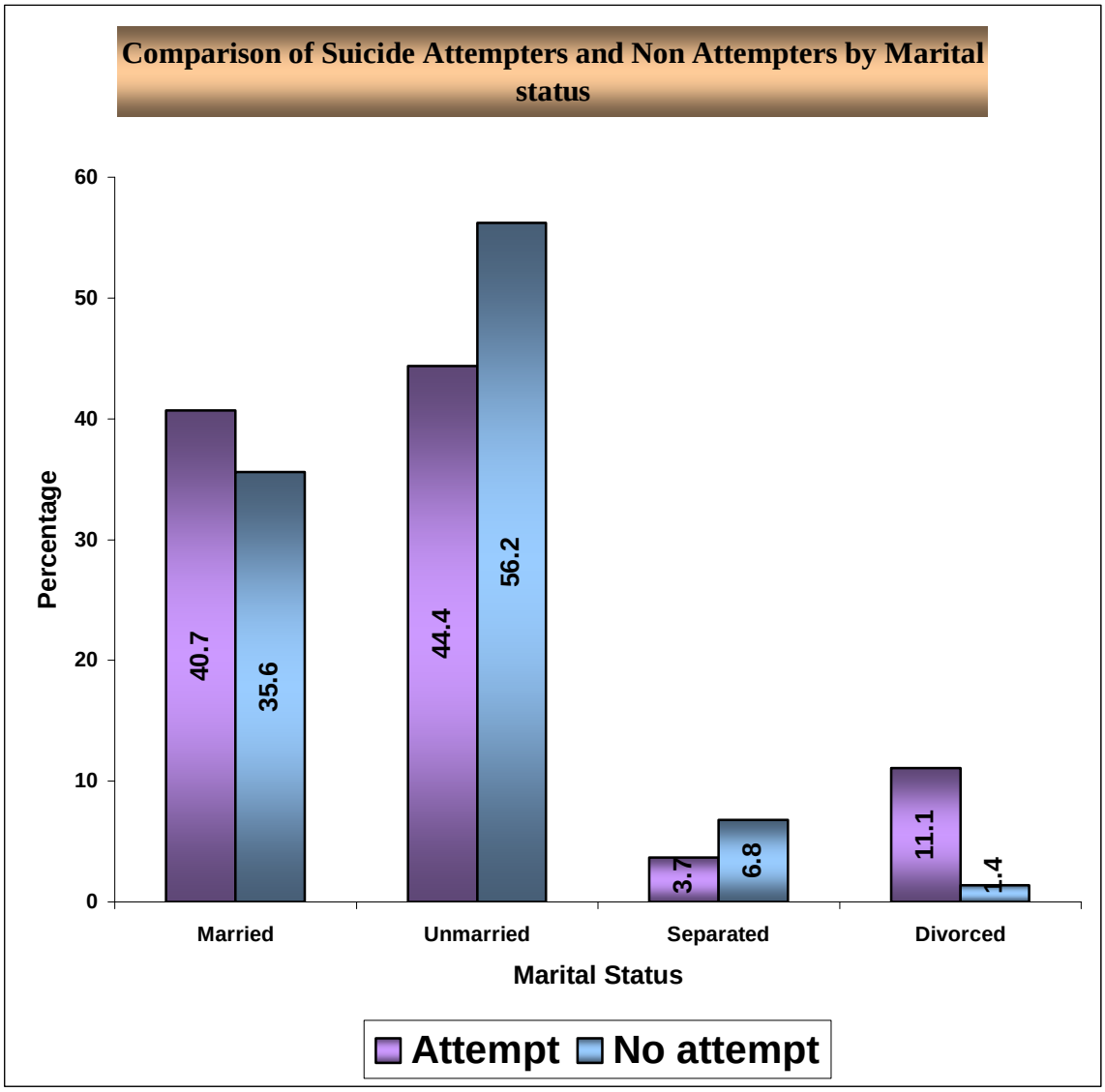

Comparison of Suicide Attempters and Non Attempters by Marital status
Percentage
60
50
40
30
20
10
0
40.7
35.6
44.4
56.2
3.7
6.8
11.1
1.4
Married
Unmarried
Separated
Divorced
Marital Status
Attempt
No attempt

TABLE NO. 8 : COMPARISON OF THE SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY TYPE OF FAMILY

Type of family	Suicide Attempt				Total
	Yes		No		
	n	%	n	%	
Joint	20	74.1	53	72.6	73
Nuclear	7	25.9	20	27.4	27
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	0.02	0.88	Not significant

Out of the study population who attempted suicide, 74.1 % belonged to joint family, while 25.9 % belonged to nuclear family. Among those who did not attempt suicide, 72.6 % belonged to joint family, while 27.4 % belonged to nuclear family. The difference was not statistically significant.

FIGURE 8.

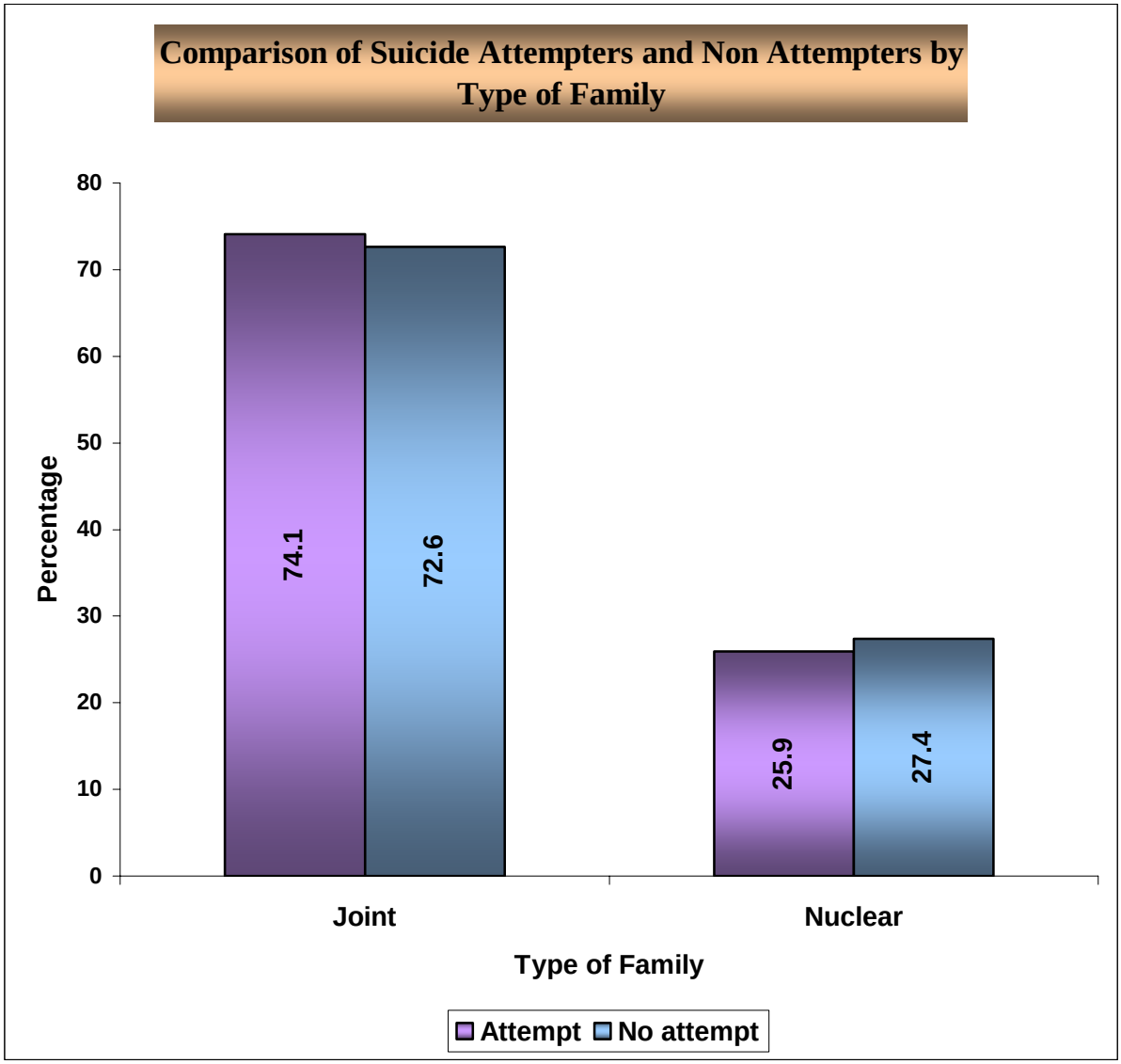

Comparison of Suicide Attempters and Non Attempters by Type of Family
80
70
60
50
40
30
20
10
0
Percentage
74.1
72.6
25.9
27.4
Joint
Nuclear
Type of Family
Attempt
No attempt

TABLE NO. 9 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY FAMILY HISTORY OF MENTAL ILLNESS AND SUICIDE

Family History	Suicide attempt				Total	Chi value	P value
	Yes		No				
	n	%	n	%			
None	7	25.9	41	56.2	48	7.22	0.007*
Mental illness	8	29.6	21	28.8	29	0.01	0.93
Suicide	7	25.9	4	5.5	11	8.42	0.003*
Both	5	18.8	7	9.6	12	1.49	0.22
Total	27	100	73	100	100	-	-

Out of the study population who attempted suicide, 25.9 % had no family history of mental illness or suicide, 29.6 % had family history of mental illness, 25.9 % had family history of suicide, and 18.8 % had family history of both mental illness and suicide. Among the non-attempters group 56.2 % had no family history of mental illness or suicide, 28.8 % had family history of mental illness, 5.5 % had family history of suicide, and 9.6 % had family history of both mental illness and suicide. Family history of suicide was significantly more prevalent in those who attempted suicide compared to those who did not (p - 0.003). The non-attempters group had significantly less number of family members with either mental illness or suicide (p -0.007).

FIGURE 9.

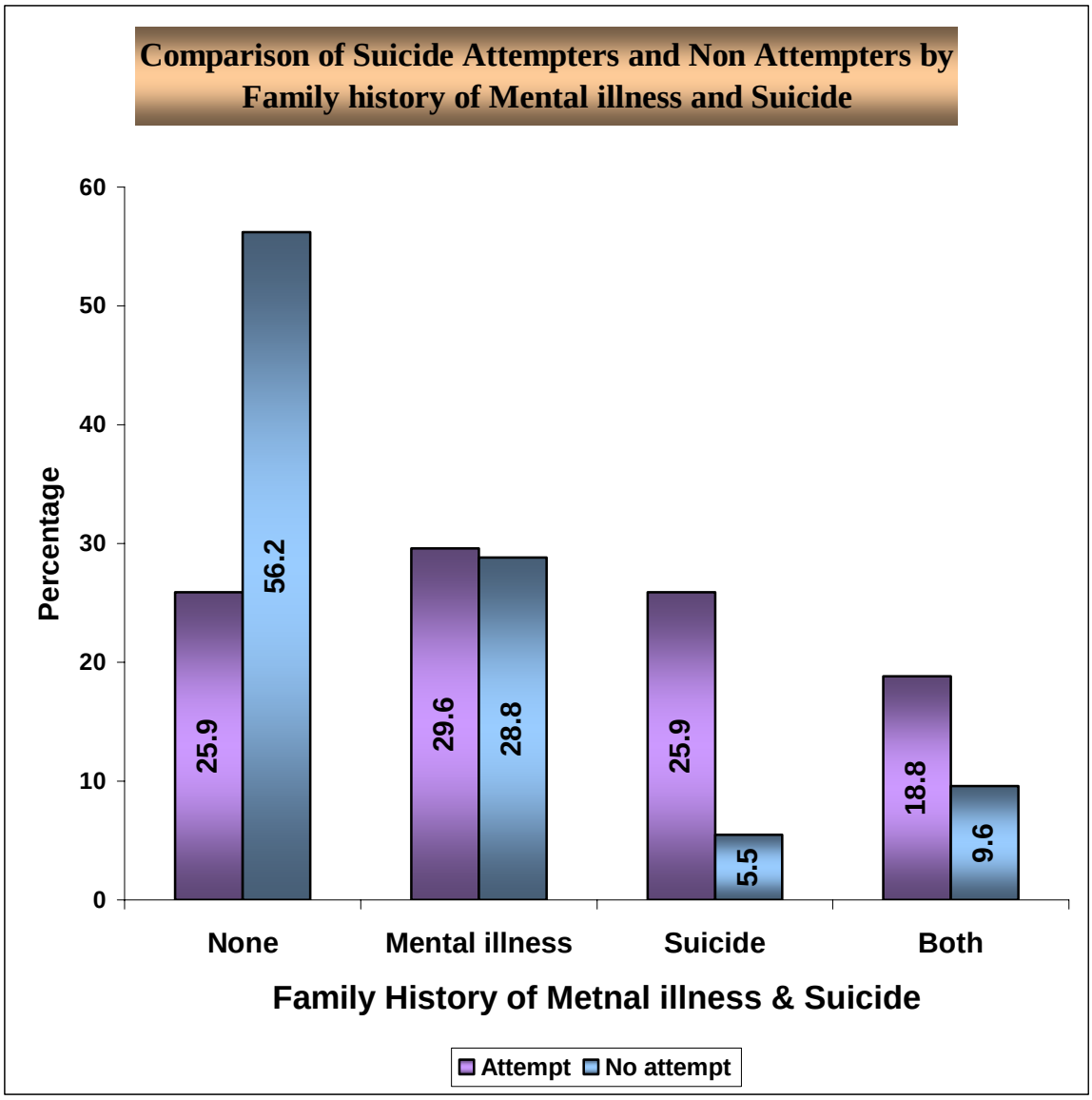

Comparison of Suicide Attempters and Non Attempters by Family history of Mental illness and Suicide
60
50
40
30
20
10
0
Percentage
25.9
56.2
29.6
28.8
25.9
5.5
18.8
9.6
None
Mental illness
Suicide
Both
Family History of Metnal illness & Suicide
Attempt
No attempt

TABLE NO. 10 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SUB-TYPES OF SCHIZOPHRENIA

Subtypes	Suicide attempt				Total
	Yes		No		
	n	%	n	%	
Undifferentiated	19	70.4	41	56.2	60
Paranoid	5	18.5	22	30.1	27
Hebephrenic	2	7.4	6	8.2	8
Catatonic	1	3.7	4	5.5	5
Total	27	100	73	100	100

	Value	P value	Significance
Chi-Square	1.79	0.62	Not significant

In the study group of those who attempted suicide, 70.4 % were undifferentiated type, 18.5 % were paranoid type, 7.4 % were hebephrenic type, and 3.7 % were catatonic type. Among the non-attempters group 56.2 % were undifferentiated type, 30.1 % were paranoid type, 8.2 % were hebephrenic type, and 5.5 % were catatonic type. The difference was not statistically significant.

FIGURE 10.

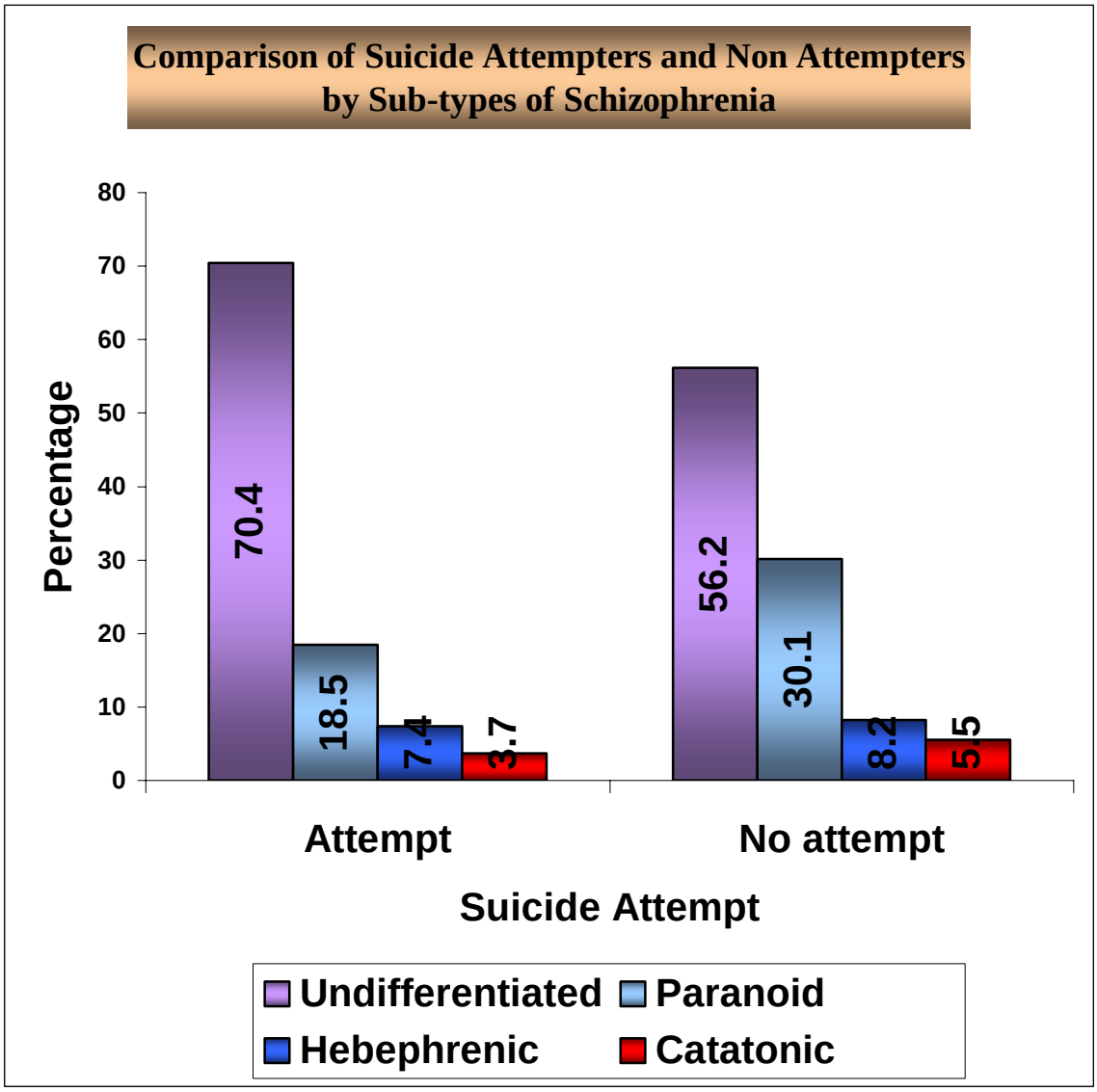

Comparison of Suicide Attempters and Non Attempters by Sub-types of Schizophrenia
Percentage
80
70
60
50
40
30
20
10
0
70.4
18.5
7.4
3.7
56.2
30.1
8.2
5.5
Attempt
No attempt
Suicide Attempt
Undifferentiated
Paranoid
Hebephrenic
Catatonic

TABLE NO. 11 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SAPS (SCALE FOR THE ASSESSMENT OF POSITIVE SYMPTOMS) SCORES.

SCALE	Suicide Attempts				P value
	Yes (n – 27)		No (n – 73)		
	Mean	S.D.	Mean	S.D.	
SAPS SCORE	21.93	9.20	17.33	7.68	0.01

The mean score on SAPS (positive symptoms scale) was 17.33 (SD - 7.68) for non-attempters, compared to 21.93 (SD - 9.20) for those with suicide attempt. The difference was statistically significant (p - 0.01) in t test.

TABLE NO. 12 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY SANS (SCALE FOR THE ASSESSMENT OF NEGATIVE SYMPTOMS) SCORES.

SCALE	Suicide Attempts				P value
	Yes (n – 27)		No (n – 73)		
	Mean	S.D.	Mean	S.D.	
SANS SCORE	15.52	6.77	15.23	7.61	0.86

The mean SANS (negative symptoms scale) score was 15.23 (SD - 7.61) for non-attempters, compared to 15.52 (SD - 6.77) for those with attempt. This difference was not statistically significant (p - 0.86) in t test.

TABLE NO. 13 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY CDSS (CALGARY DEPRESSION SCALE FOR SCHIZOPHRENIA) SCORES.

SCALE	Suicide Attempts				P value
	Yes (n – 27)		No (n – 73)		
	Mean	S.D.	Mean	S.D.	
CDSS SCORE	4.667	2.602	3.320	2.266	0.01

The mean score on CDSS (Depression scale) was 3.320 (SD - 2.266) for non attempters, while it was 4.667 (SD - 2.602) for attempters. This difference was statistically significant (p - 0.01) in t test.

FIGURE 11.

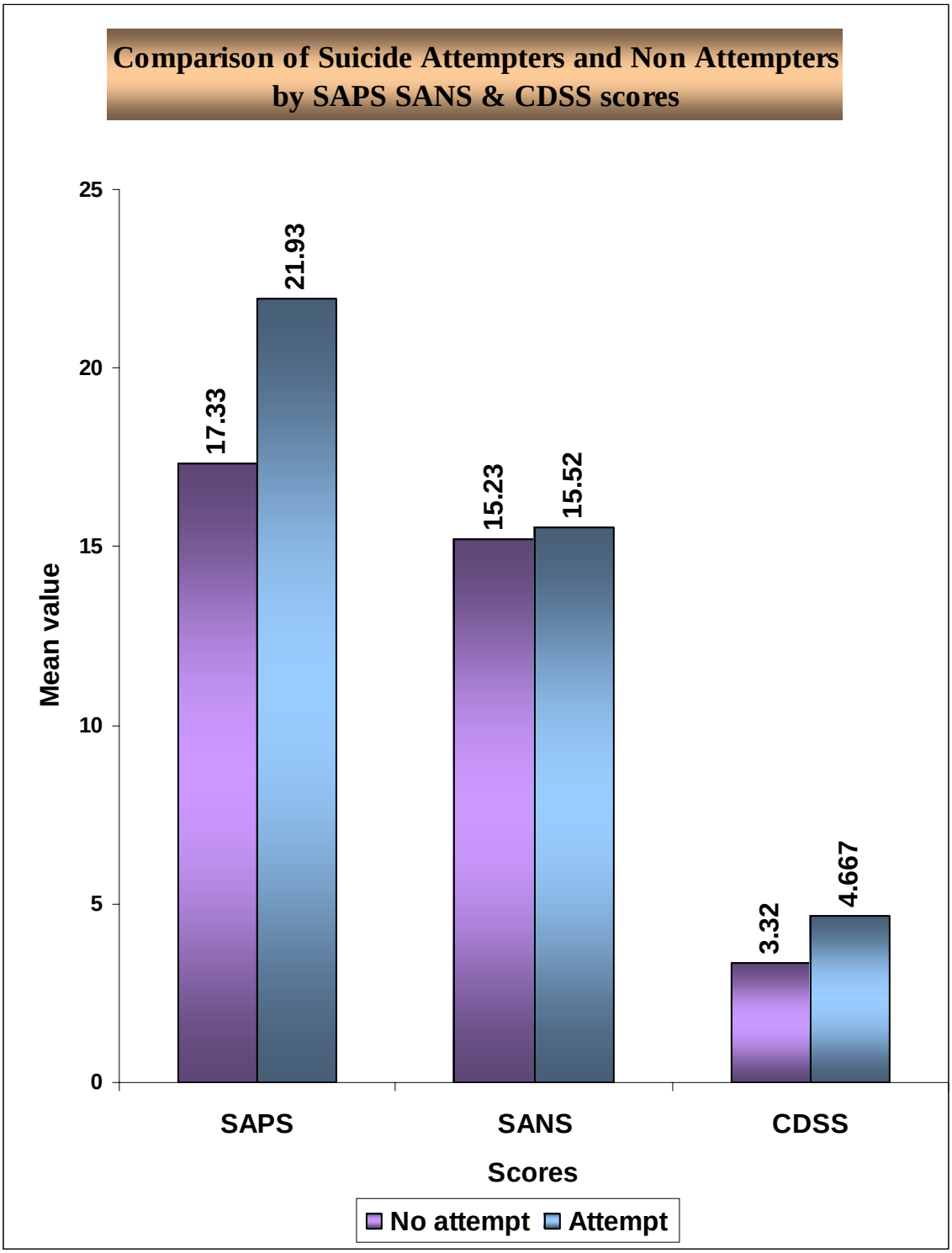

Comparison of Suicide Attempters and Non Attempters by SAPS SANS & CDSS scores
Mean value
25
20
15
10
5
0
17.33
21.93
15.23
15.52
3.32
4.667
SAPS
SANS
CDSS
Scores
No attempt
Attempt

TABLE NO. 14 : COMPARISON OF SUICIDE ATTEMPTERS AND NON ATTEMPTERS BY DURATION OF THE ILLNESS

Duration of Illness	Suicide attempts				Total
	Yes		No		
	n	%	n	%	
< 1 year	2	7.4	5	6.8	7
1 – 2 years	2	7.4	13	17.8	15
2 – 5 years	11	40.7	21	28.8	32
> 5 years	12	44.4	34	46.6	46
Total	27	100	73	100	100

	Value	P value	Significance
Chi Square	2.33	0.20	Not significant

Among those who attempted suicide, 7.4 % had duration of illness less than 1 year, 7.4 % had duration of illness between 1 and 2 years, 40.7 % had duration between 2 and 5 years, while 44.4 % had more than 5 years duration of illness. The mean duration of illness among those who attempted suicide was 6.48 years (S.D. 4.8). In the non-attempters group, 6.8 % had duration of illness less than 1 year, 17.8 % between 1 and 2 years, 28.8 % between 2 and 5 years, while 46.6 % had more than 5 years duration of illness. The mean duration among non-attempters was 8.3 years (S.D. 6.8). This difference was not statistically significant.

FIGURE 12.

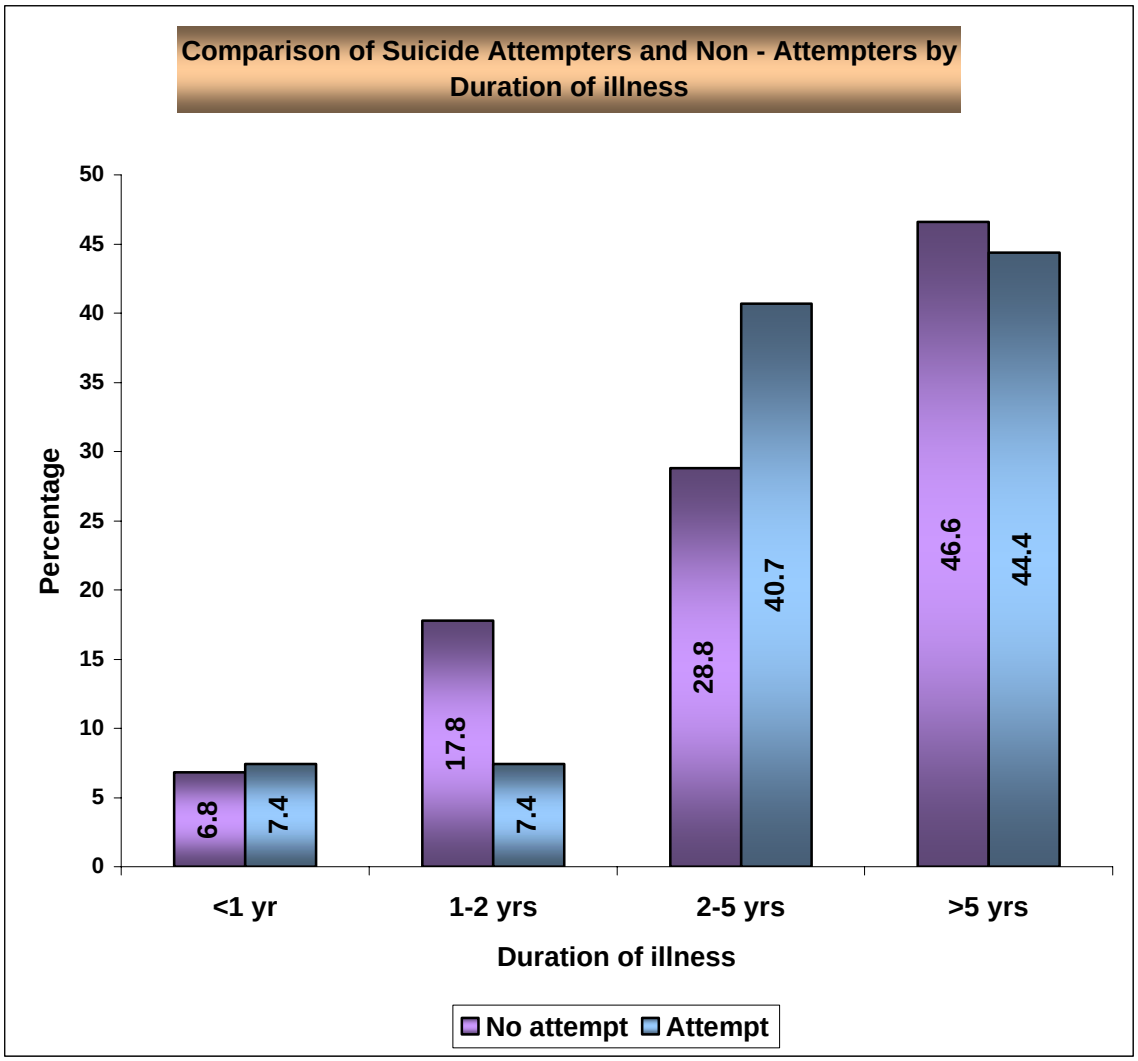

Comparison of Suicide Attempters and Non - Attempters by Duration of illness
Percentage
50
45
40
35
30
25
20
15
10
5
0
6.8
7.4
17.8
7.4
28.8
40.7
46.6
44.4
<1 yr
1-2 yrs
2-5 yrs
>5 yrs
Duration of illness
No attempt
Attempt

TABLE NO. 15 : TIMING OF SUICIDE ATTEMPT FROM ONSET OF ILLNESS

Period of illness	Frequency	Percentage
1st year	14	51.85
2nd year	4	14.82
3rd year	1	3.7
4th year	3	11.11
5th year	1	3.7
> 5 years	4	14.82
Total	27	100

Among those who attempted suicide, 51.85 % attempted suicide during the first year of their illness, 14.82 % during their second year, 3.7 % during their third year, 11.11 % during their fourth year, 3.7 % during their fifth year, and 14.82 % after five years into their illness.

FIGURE 13.

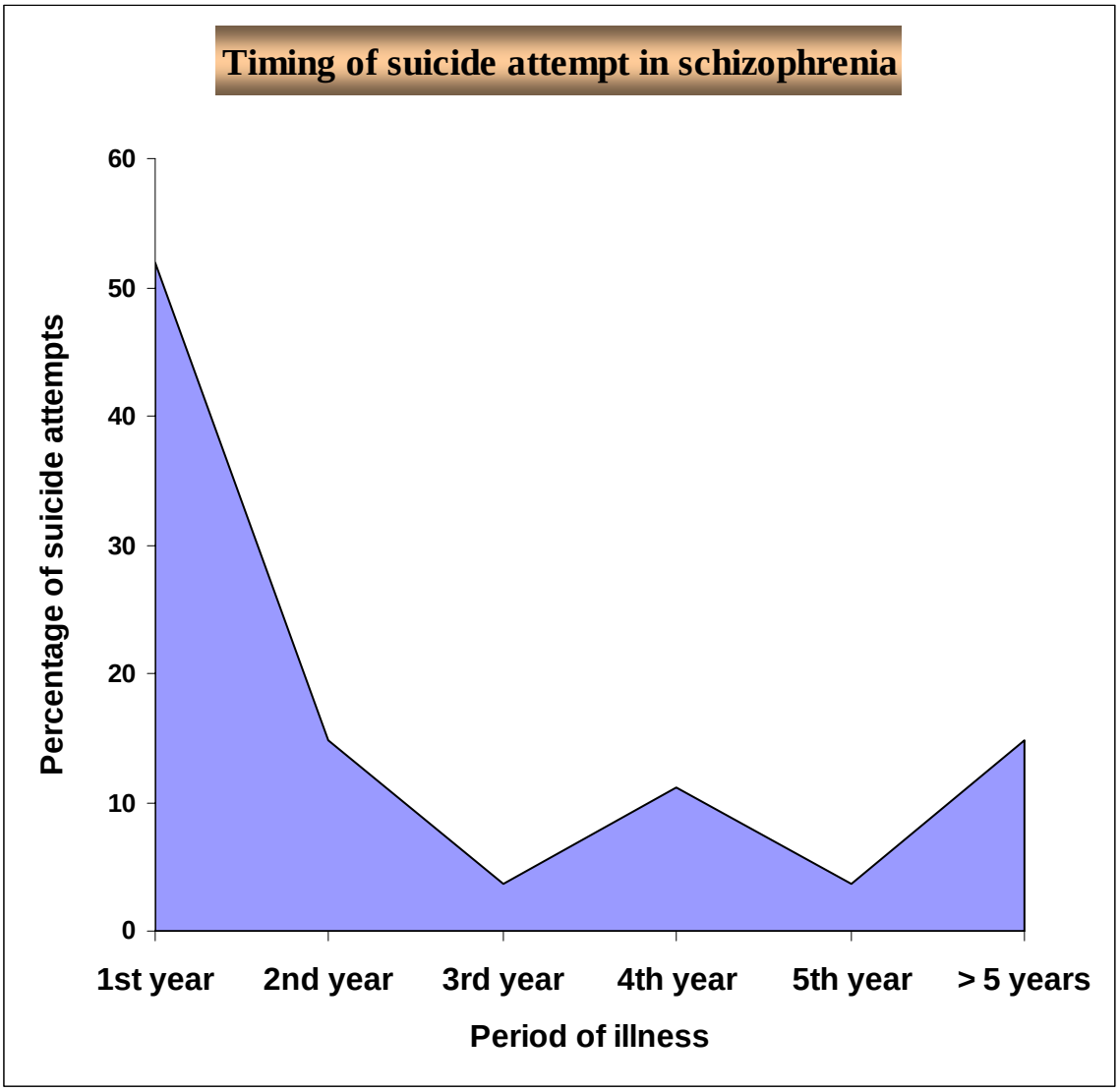

Timing of suicide attempt in schizophrenia
Percentage of suicide attempts
60
50
40
30
20
10
0
1st year
2nd year
3rd year
4th year
5th year
> 5 years
Period of illness

TABLE NO. 16 : DISTRIBUTION OF THOSE WHO ATTEMPTED SUICIDE BY REASON FOR ATTEMPT

Reason	Frequency	Percentage
Delusions	11	40.74
Depressive features	8	29.63
Impulsive	4	14.81
Hallucinations	2	7.41
Insight	2	7.41
Total	27	100

Out of the total suicide attempters, 40.74 % attributed their suicide attempt to delusions, 29.63 % secondary to depressive features, 14.81 % as an impulsive act, 7.41 % due to hallucinations, and 7.41 % attributed to insight.

FIGURE 14.

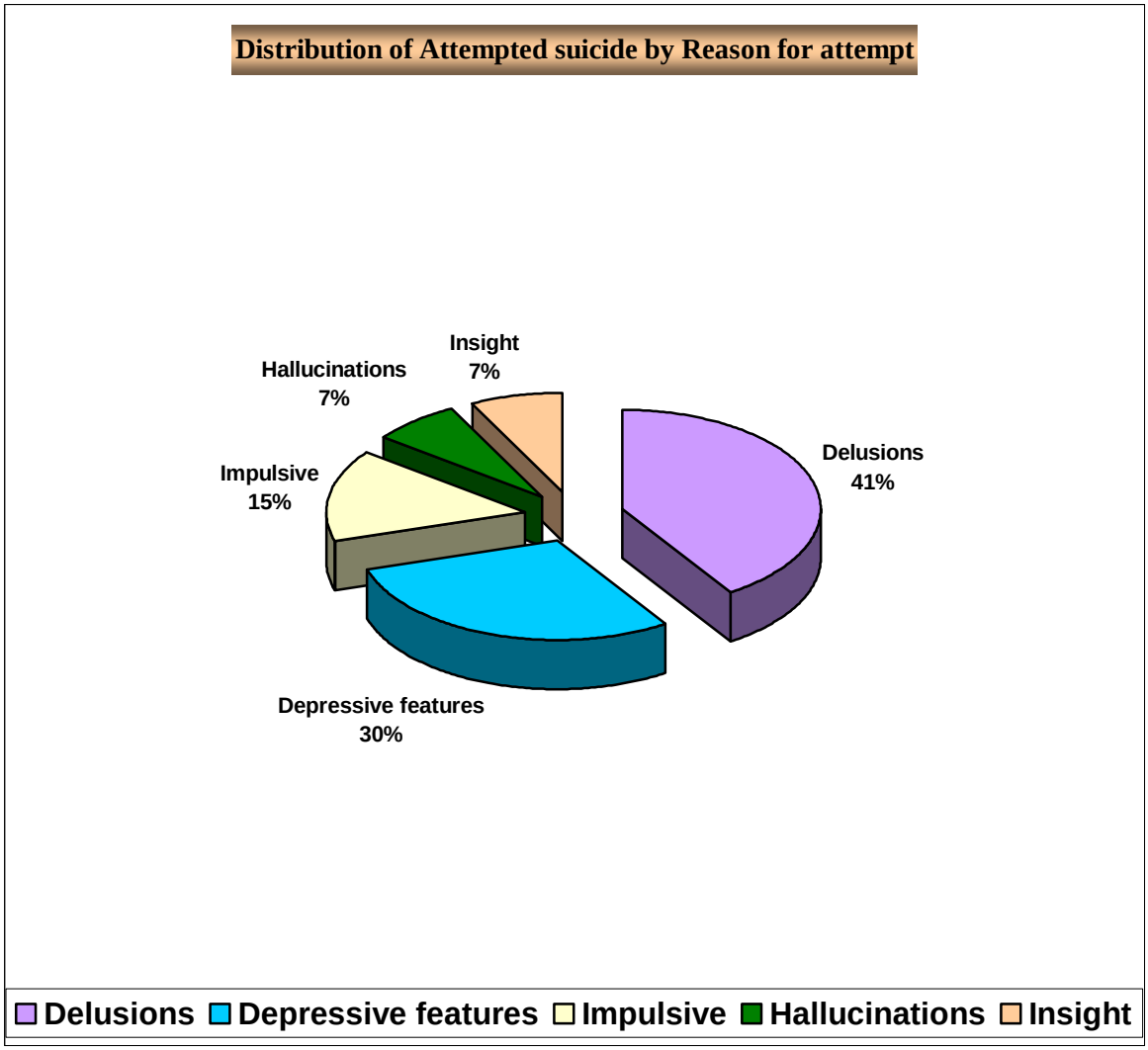

Distribution of Attempted suicide by Reason for attempt
Insight 7%
Hallucinations 7%
Impulsive 15%
Delusions 41%
Depressive features 30%
Delusions
Depressive features
Impulsive
Hallucinations
Insight

TABLE NO. 17 : DISTRIBUTION OF THOSE WHO ATTEMPTED SUICIDE BY MODE OF ATTEMPT

Mode of attempt	Frequency	Percentage
Hanging	12	44.4
Drug overdose	7	25.9
Drowning	3	11.1
Self immolation	2	7.4
OPC Poisoning	2	7.4
Others	1	3.7
Total	27	100

In our study, out of the 27 individuals who attempted suicide, hanging was the most common method adopted by 44.4 % of people. Drug overdose was the second common method. 25.9 % of suicide attempters followed this method. 11.1 % attempted suicide by drowning. Two individuals each (7.4 %) by OPC poisoning and self immolation, while 1 person (3.7%) attempted suicide by trying to catch a live electrical wire.

FIGURE 15.

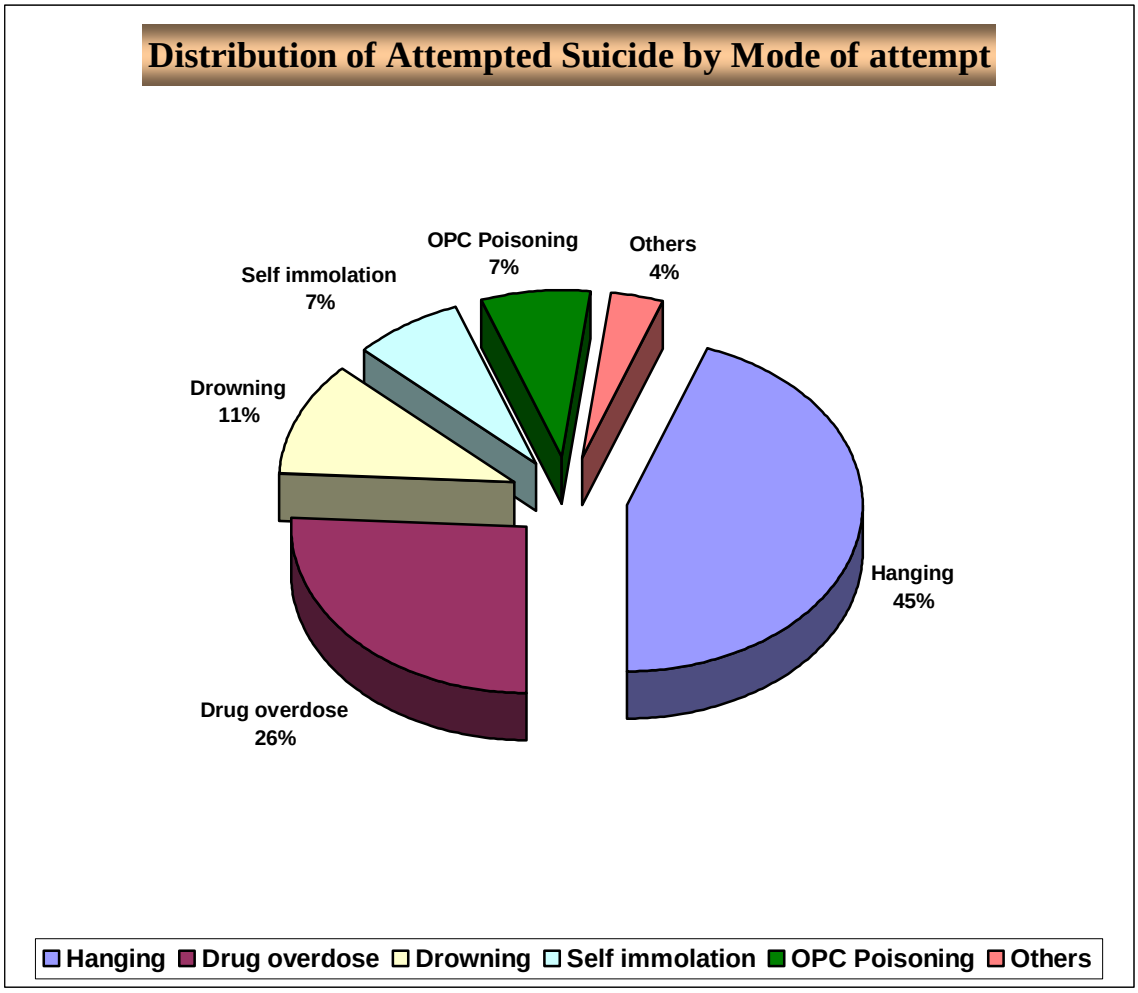

Distribution of Attempted Suicide by Mode of attempt
OPC Poisoning 7%
Others 4%
Self immolation 7%
Drowning 11%
Hanging 45%
Drug overdose 26%
Hanging
Drug overdose
Drowning
Self immolation
OPC Poisoning
Others

TABLE NO. 18 : DISTRIBUTION OF THOSE WHO ATTEMPTED SUICIDE BY NEED FOR HOSPITALIZATION FOR THE ATTEMPT

Hospitalization	Frequency	Percentage
No	5	18.5
Yes	22	81.5
Total	27	100

Out of those who attempted suicide, 81.5 % were hospitalized for their suicidal attempt, while 18.5 % were not treated by admission to a hospital.

FIGURE 16.

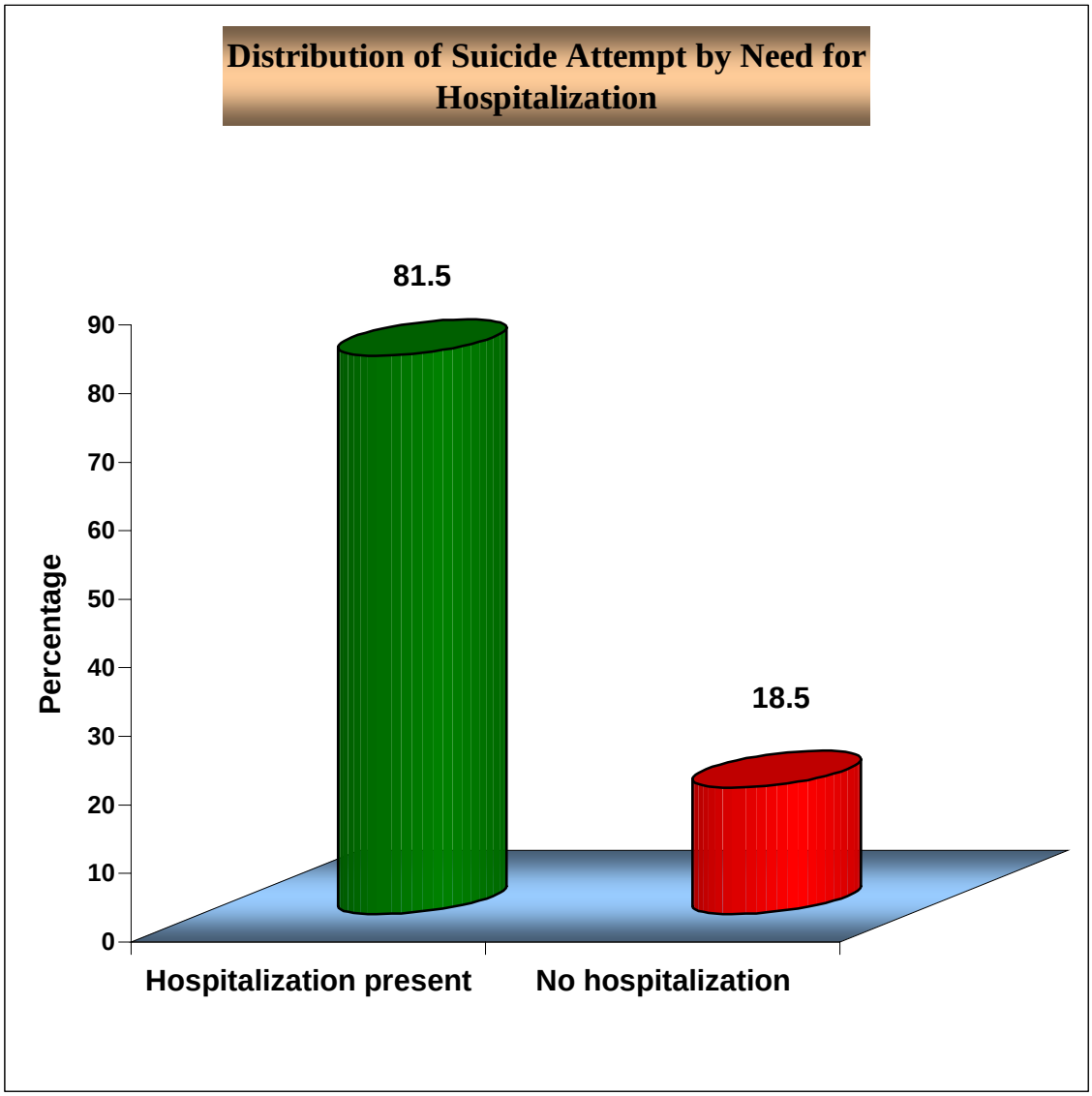

Distribution of Suicide Attempt by Need for Hospitalization
81.5
18.5
Percentage
90
80
70
60
50
40
30
20
10
0
Hospitalization present
No hospitalization

TABLE NO. 19 : DISTRIBUTION OF THOSE WHO ATTEMPTED SUICIDE BY COMMUNICATION OF THE ATTEMPT

Communication	Frequency	Percentage
Yes	10	37
No	17	63
Total	27	100

Among the people who attempted suicide 37 % had communicated their intent before the act, while 63 % did not.

FIGURE 17.

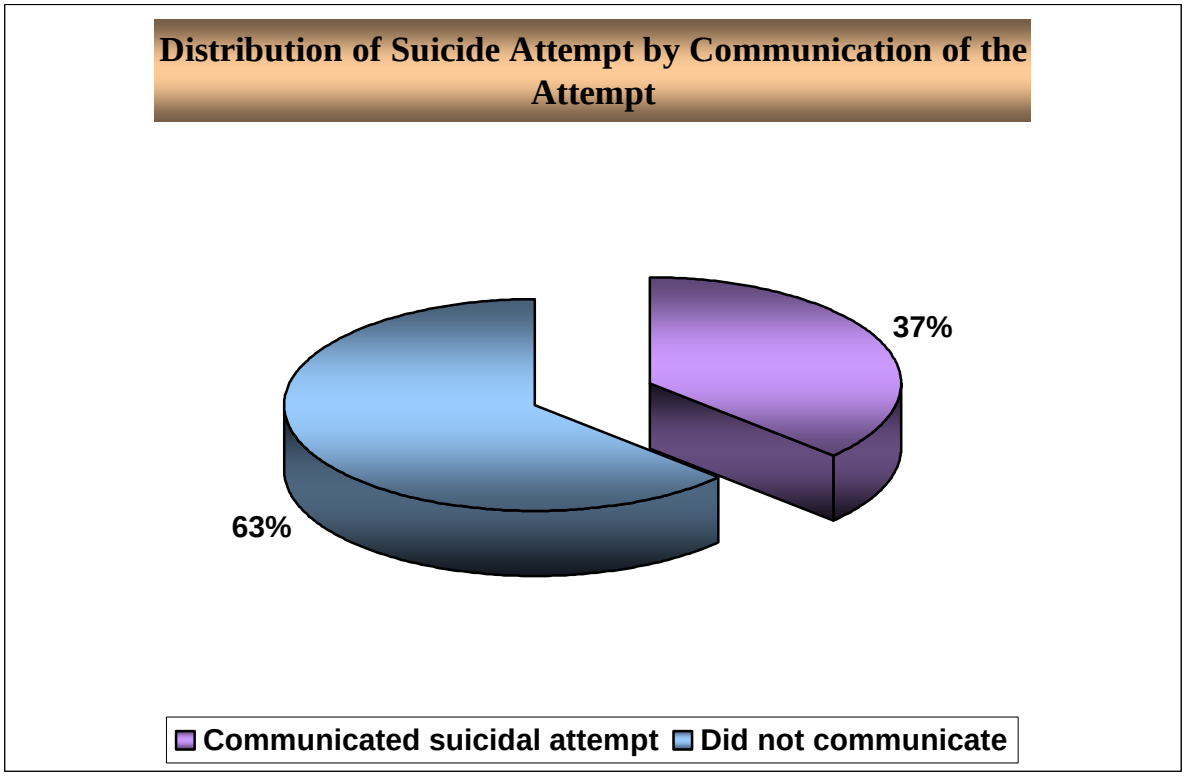
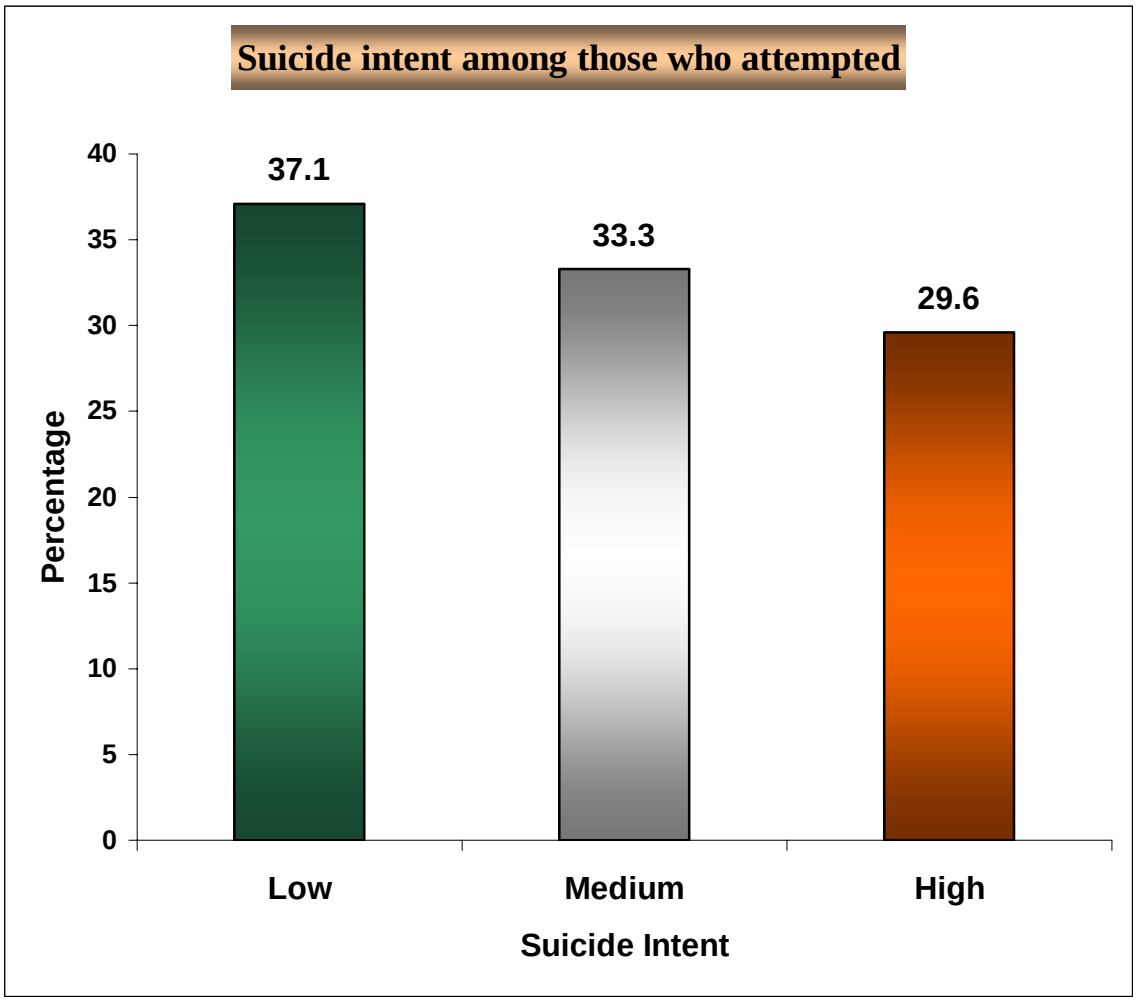

Distribution of Suicide Attempt by Communication of the Attempt
37%
63%
Communicated suicidal attempt
Did not communicate

TABLE NO. 20 : SUICIDE INTENT AMONG THOSE WHO ATTEMPTED

Suicide Intent	Frequency	Percentage
Low	10	37.1
Medium	9	33.3
High	8	29.6
Total	27	100

On assessing the severity of suicide attempt (suicide intent scale), 37.1 % were found to have low intent, 33.3 % were found to have medium intent, and 29.6 % had high intent.

FIGURE 18.


Suicide intent among those who attempted
40
35
30
25
20
15
10
5
0
Percentage
37.1
33.3
29.6
Low
Medium
High
Suicide Intent

DISCUSSION

Studies state that the risk for suicidal behavior is high throughout the life-span of individuals suffering from schizophrenia. The role of demographic variables in suicidal behavior has given contrasting results across various studies. Young males suffering from schizophrenia have been stated to be at a higher risk. Tsuang reported lesser suicide risk in females suffering from schizophrenia, while studies by Ting-Pong Ho and Vanessa Raymont reported higher risk for young adults. In our study we could not establish age and gender to be associated with suicidal attempts in schizophrenia.

It has been stated that high intelligence and high pre-morbid I.Q. are associated with greater risk of suicide in schizophrenia. We were not able to find any association between educational status and suicide attempts in our study. Most of the individuals in our study population were having education towards the lower side. Although unemployment has been stated in literature and in some studies (Kaplan and Vanessa) to be a risk factor for suicide attempt in schizophrenia, it could not be replicated in this study. The results of this study were similar to the ones by Louis Appleby and Harkavy which found the role of unemployment to be overplayed.

Higher socio-economic status is stated to be a risk factor for suicide. In higher status group fall in social status due to illness is said to contribute towards suicide attempts. Suicide is also said to be more prevalent in the lower socio-economic class (Kaplan). We were not able to find any significant relationship between social status and suicidal attempts. Most of our patients were from the lower and middle socioeconomic groups, while only two individuals were from higher socioeconomic class in our study.

According to the study by Radomsky et al being single, separated or divorced did not confer higher risk for suicide attempts in psychosis. But the result is in contrast to literature which states that majority of the schizophrenic suicides are committed by unmarried. Our study did not find any significant association between marital status and suicide attempts in schizophrenia. Lack of family support, isolation and separation from others are said to be risk factors for suicide in schizophrenia (Drake et al). But in our Indian population where nearly three-fourth of the patients were in joint family setting, no significant difference was found between suicide attempters and non-attempters in relation to type of family, similar to another Indian study by Dhavale et al.

We did not find any significant difference in the demographic variables between individuals who exhibited suicidal behavior and those who did not, similar to the study by Harkavy et al. However, this study carried out in a Government Institute of Mental Health had its limitations regarding demographic variables like educational status, socioeconomic class and employment

A common underlying genetic factor may explain the association of suicidal behavior with aggression. In our study significantly higher number of individuals who had a family history of suicide had more suicidal attempts compared to those who did not. This result was similar to previous studies which found genetic and familial factors contributing to suicide risk. The finding was also consistent with adoption studies reporting genetic risk for suicide (Roy and Segal).

Fenton et al found that individuals with paranoid schizophrenia subtype had an elevated suicidal risk compared to others. Our findings were similar to the views expressed by Kaplan and Ting Pong Ho who did not find any particular sub-type of schizophrenia to be prone for suicidal attempts.

Prominent delusions & suspiciousness (Fenton et al, 1997), and persistent hallucinations (Brier & Astrachan, 1984), have been reported to have elevated risk of suicide in schizophrenia. Recent study by Kaplan and Harrow, 1999 also found that positive symptoms correlated with suicidal behavior. Our results were similar to the views expressed in literature and other studies which had stated that suicidal behavior in schizophrenia was related to the severity of the illness (Minkoff et al), particularly the positive symptoms.

Most of the studies have not established association between suicidal behavior and negative symptoms (Dhavale et al) similar to our study, while Fenton et al 1997 found that suicidal behavior in schizophrenia had significantly lower negative symptoms, suggesting that prominent negative symptoms, such as diminished drive, blunted affect, and social & emotional withdrawal, counter the emergence of suicidality in patients with schizophrenia and that deficit syndrome defines a group at relatively lower risk for suicide. In our study both the groups were suffering to a similar extent from negative symptoms.

Numerous studies (Bartels, Heila, Radomsky, Roy, and Steinberg) and literature, have found depressive symptoms to be strongly related to suicidal behavior in schizophrenia. Chian-Jue Kuo et al, 2005 had found the depressive features even in residual phases of schizophrenic illness to be related to higher suicidal intensity. All these studies had emphasized that feelings of hopelessness was one of the major factor related to suicidal attempts in schizophrenia. Most of the studies report that concomitant depressive symptoms elevate the risk of suicidal behavior in schizophrenia. The results of our study also established similar correlation. There was a strong and significant relationship between the presence of depressive features and suicide attempt.

Our results clearly showed that majority of the people who attempted suicide did so during early periods of their illness, which is consistent with the findings of many studies. During early acute phase of illness, the symptom severity, and depressive symptoms are more (Knights et al). Suicide rates remain elevated throughout the lifetime of individuals suffering from schizophrenia, but majority of them attempt in their early stages of illness, usually near the illness onset (Brier et al). According to Black, risk for suicide was most pronounced during the first two years after hospital discharge. Literature also states that suicide attempts in schizophrenia are most common in the first few years of illness, which was similar to our study results. In our study, the duration of illness was found to be no different in those with suicide attempts compared to the non-attempters even though Vanessa states that those with chronic schizophrenic illness are at a greater risk.

The finding of delusions to be the most common cause of suicidal attempt in our study is similar to the reports by Fenton et al who found two positive symptoms, suspiciousness and delusions to be more severe in schizophrenic suicides. Dhavale et al in their study on suicide attempts in schizophrenia also found that delusions were the most common cause. More than forty percent of those who attempted suicide attributed their delusions to be the reason which drove them to the attempt.

Depression was also a very common cause as quoted by studies (Bartels et al). Kaplan states that after recent discharge patients may experience new adversity or return to ongoing difficulties, as a result, they become dejected, experience feelings of helplessness and hopelessness, reach a depressed state, and have, and eventually act on, suicidal ideas. Nearly one third of suicide attempters in our study attributed depression as the reason behind their attempt. Impulsive acts are common in schizophrenia, where people suffering are found to have low threshold for tolerance. It was found to be the third common reason for suicide attempts in our study.

Though an oft repeated cause, stated by some to be significant, hallucinations were contributory to the suicidal attempts in very small proportion. Suicidal command hallucinations have been found to be rare both in attempted and completed suicides (Harkavy et al, 1994 and Roy et al, 1982). Harkavy also reports that individuals who are already at risk for suicidal behavior (depressive features, past attempts) may be at increased risk for suicide attempt when experiencing command auditory hallucinations.

The notion that insight maybe associated with greater suicidal behavior is partially supported by the study done by Amador et al. But they have also stated that awareness in patients of the negative symptoms and delusions were associated with suicidal thoughts and contrary to expectations, general awareness of having a mental disorder did not predict suicidal behavior. In our study too only small proportion of attempters attributed gaining insight as the reason behind their suicide attempt. There are also chances for more than one factor operating in an individual at the time of suicide attempt (e.g. individual getting depressed due to persistent hallucinations and attempting suicide).

In our study hanging was found to be the commonest mode of attempt. This is consistent with suicidal behavior in Indian population (Dhavale et al). Nearly one fourth of the individuals who attempted suicide did so by overdose of medication given for their illness, the second commonest cause. Thus it is advocated in people suffering from schizophrenia, especially those prone for suicidal behavior, that drugs be given under supervision by one of the family member or care giver. Other causes for attempted suicide were drowning, self immolation and organo-phosphorus compound poisoning. One individual attempted suicide by trying to catch a live electric wire. Other studies state that medically dangerous, lethal and violent methods are higher in suicide attempts in schizophrenia (Radomsky et al) but in our study we did not find it to be so.

From our study, more than eighty percent of those who attempted suicide were hospitalized for their attempt and nearly one out of every third person suffering from schizophrenia communicated their attempt. This should make us to look into the fact that verbal warnings given by the individuals suffering from schizophrenia should not be ignored and needs to be addressed and intervened to avoid a calamitous outcome and most of the attempts are serious, requiring admission. On assessing the suicidal intent for the highest attempt, it was found that nearly a third of those who attempted had a very high intent and another third had a medium intent. This is in keeping with the study done by Jill Harkavy et al, which found that most suicidal attempts in schizophrenia were serious, typically requiring medical attention.

SUMMARY

- High rates of suicide attempts are seen in people suffering from schizophrenia especially during early stages of their illness.
- Demographic profile such as age, sex, education, occupation, socioeconomic status, marital status, and family type were not significantly related to suicide attempts.
- Family history of suicide was a strong and significant factor in patients with suicide attempts.
- Subtypes of schizophrenia were not related to suicide attempts.
- Those who attempted suicide were suffering more from positive symptoms, and had more depressive features.
- Duration of illness was not a significant factor between suicide attempters and non-attempters.
- Hanging was the most common mode in schizophrenic suicide attempts in our population, followed by drug overdose.
- One in a third attempter verbally communicated his intention before the attempt.
- Majority of the suicide attempters were hospitalized for their attempt.
- Suicide attempts were most commonly secondary to delusions and depressive features.
- Most of the suicide attempts had medium to high intent.

CONCLUSIONS

People suffering from schizophrenia are at a high risk for making suicidal attempts, especially when the illness is acute and severe, in early stages, when accompanied by depressive symptoms. Clinicians need to be wary of this fact and intervene aggressively and early. More attention is needed for the higher risk group which includes those with a family history of suicide and persons communicating their intention.

Suicide is the single largest cause of premature death among individuals with schizophrenia. It requires early identification of risk factors and possible prevention strategies needs to be devised. Maintaining care beyond the point of clinical recovery is important in protecting high risk individuals. Prevention of suicide in schizophrenia is likely to result from treatment of depressive symptoms, improving adherence to treatment, and maintaining special vigilance in patients with risk factors, especially after losses.

Carers and professionals are often left with feelings of profound ineffectualness and guilt in the face of suicide, so it is vital for clinicians to feel confident in their understanding of risk assessment and management in this particularly vulnerable group. Hence effective recognition of medical and social risk factors in high risk patients, and effective monitoring of treatment is important. This would definitely make us keep a step towards meeting one of the greatest unmet challenges in psychiatry, “Suicide in Schizophrenia.”

LIMITATIONS

- Since this study was done in a government institute, the groups did not represent the suffering schizophrenic population in its entirety. Certain variables like socioeconomic status, educational and employment status were not fully represented.
- The evaluation was done not at the time of attempt, hence the severity of psychopathology could have undergone natural changes characteristic of the course of schizophrenic illness.
- Recall bias could have influenced the patients and relatives recollection of the suicidal intent during the attempt.
- Only the individuals who survived the suicidal attempt were analyzed. To analyze the entire suicidal behavior, completed suicides also needs to be studied.

FUTURE DIRECTIONS

What is apparent from current research is that not only is there a relative lack of reliable studies to support hypotheses concerning risk factors, but these very factors may well change during the course of an individual's illness. This is a concept that has certainly not been adequately addressed. The rarity of comprehensive suicide studies have meant that majority have been either population based psychological autopsy studies, which are retrospective and cannot exclude bias owing to lack of blinding in data collection, or smaller groups of retrospective case studies also involving uncertainties regarding bias and levels of information. Most studies have focused on behavior around hospitalization and suicidal antecedents ignoring young population with developing symptoms. Also the focus has been on attempted and completed suicides, although it is possible that these represent different groups.

More studies including psychological autopsy combining with biological parameters, like serotonin-dopamine interactions as targets of treatment would give us a direction to proceed, helping us in understanding and preventing the suicidal behavior in coming years. Though studies on the role of atypical antipsychotics in suicide prevention are coming up, it is still in the early stages and concrete results are yet to be known. The lack of consensus on risk factors and adequate assessment tools has made the task still more challenging to identify vulnerable patients for prospective studies.

REFERENCES

- Allebeck P, Wistedt B: Mortality in schizophrenia: Ten year follow up study based on Stockholm county inpatients registry. Arch Gen Psychiatry 1986; 43:650-653.
- Allebeck P: Schizophrenia: A life shortening disease. Schizophrenia Bull 1989; 15:81-88.
- Amador XF, Friedman JH, Kasapsis C et al: Suicidal behavior in schizophrenia and its relationship to awareness to illness. Am J Psychiatry 1996; 153:1185-1188.
- Amador XF, Strauss DH et al: The assessment of insight in psychosis. Am J Psychiatry 1993; 150:873-879.
- Appleby L, Dennehy JA et al: Aftercare and clinical characteristics of people with mental illness who commit suicide. Lancet. 1999 Apr 24; 353(9162):1397-400.
- Appleby L: Good clinical practice on suicide and suicide prevention. Psychiatric Bulletin (2001) 25: 41-42
- Asnis GM, Friedman TA, Sanderson WC, Kaplan ML, Van Praag HM, Harkavy-Friedman JM: Suicidal behavior in adult psychiatric outpatients: Description and prevalence. Am J Psychiatry 1992; 149:394-395.
- Barraclough B, Bunch J et al: Hundred cases of suicide. Br J Psychiatry 1997; 125:355.
- Bartels SJ, Drake RE, Mc Hugo GJ: Alcohol abuse, depression and suicidal behavior in schizophrenia. Am J psychiatry 1992; 149:394-395.

- Baruch Spivak, Evgeny Shabash et al: The Effects of Clozapine Versus Haloperidol on Measures of Impulsive Aggression and Suicidality in Chronic Schizophrenia Patients. J Clin Psychiatry 2003; 64:755-760.
- Beck AT, Brown G et al: Relationship between hopelessness and ultimate suicide. Am J Psychiatry 1990; 147:190-195.
- Black DW, Winokur G. Warrack G: Suicide in schizophrenia: The Iowa linkage study. J Clin Psychiatry 1985; 46:14-17.
- Black DW: Mortality in schizophrenia: The Iowa record linkage study. A comparison with general population mortality. Psychosomatics 1988; 29:55-60
- Brian A. Palmer, V. Shane Pankratz et al: The Lifetime Risk of Suicide in Schizophrenia. Arch Gen Psychiatry 2005; 62:247-253.
- Brier A, Astachan BM: Characterization of schizophrenic patients who commit suicide. Am J Psychiatry 1984; 141:206-209.
- Carroll-Ghosh T, Bruce S. Victor, James A. Bourgeois: Suicide Ch: 34. Textbook of Clinical Psychiatry 4th Ed. The American Psychiatric Publishing, 2003.
- Chian-Jue Kuo, Shang-Ying Tsai et al: Risk Factors for Completed Suicide in Schizophrenia. J Clin Psychiatry 2005; 66:579-585.
- Cohen LJ, Test MA, Brown RL: Suicide and schizophrenia: Date from a prospective community study. Am J Psychiatry 1990; 147:602-607.
- Dhavale HS, Sapna Nayak: Study of Suicide attempts in Schizophrenics: Archives of Indian Psychiatry 2005; 7(1):23-33.
- Drake RE, Cotton PG et al: Depression, hopelessness, and suicide in chronic schizophrenia. Br J Psychiatry 1986; 149:554-559.

- Dyer, Kreitman N: Hopelessness, and suicide intent in parasuicide. Br J Psychiatry 1984; 147:554-559.
- Fawcett J, Schetner WA et al: Time related prediction of suicide in major affective disorder. Am J Psychiatry 1990; 147:1189-1194.
- Fenton WS, McGlashan TH: The Natural history of schizophrenia subtypes. Arch Gen Psychiatry 1991; 48:969-977.
- Fenton WS, McGlashan TH et al: Symptom subtypes and suicidality in patients with schizophrenia spectrum disorders. Am J Psychiatry 1997; 154:199-204.
- Green MF et al: The Temporal relationship between depressive and psychotic symptoms in recent onset schizophrenia. Am J Psychiatry 1990; 147:179-182.
- Heila H, Erkki T. Isometsaet et al: Suicide Victims with Schizophrenia in Different Treatment Phases and Adequacy of Antipsychotic Medication. J Clin Psychiatry 1999; 60:200-208
- Heila H, Isometsaet ET, Henriksson MM et al: Suicide and schizophrenia. Am J Psychiatry 1997; 154:1235-1242.
- Jill M. Harkavy-Friedman, Kathleen Restifo et al: Suicidal behavior in schizophrenia. Am J Psychiatry 1999; 156:1276-1278.
- Jill M. Harkavy-Friedman et al: Suicide Attempts in Schizophrenia: The Role of Command Auditory Hallucinations for Suicide. J Cl Psychiatry 1994; 55:252-254.
- Kahn RS, Davidson M et al: Effect of neuroleptic medication on cerebrospinal fluid monoamine metabolite concentrations in schizophrenia. Arch Gen Psychiatry 1993; 50:599-605.

- Kane J, Honigfeld G, Singer J, Meltzer H: Clozapine for treatment resistant schizophrenia a double blind comparison with chlorpromazine. Arch Gen Psychiatry 1988; 45:789-796.
- Kaplan and Sadock's Synopsis of Psychiatry Behavioral Sciences/Clinical Psychiatry. Emergency Psychiatric Medicine, Suicide (34.2). 9th Ed. 2003. Lippincott Williams and Wilkins.
- Karon Dawkins, Robert N. Golden, and Jan A. Fawcett: Therapeutic Management of the Suicidal Patient. Psychiatry John Wiley & Sons, Ltd., 2nd Ed. 2003.
- Keith Hawton, and Lesley Sutton. Schizophrenia and suicide: systematic review of risk factors. Br J Psychiatry 2005; 187:9-20.
- King E: Suicide in the mentally ill: An epidemiological sample and implication for clinicians. Br J Psychiatry 1994; 165:658-663.
- Knights A, Hirsch SR: Revealed depression and drug treatment for schizophrenia. Arch Gen Psychiatry 1981; 38:806-811.
- Kreitman N, ed. Parasuicide. New York: Wiley; 1997.
- Meltzer HY, Ghadeer Okayli: Reduction of suicidality during clozapine treatment of neuroleptic resistant schizophrenia, impact on risk benefits assessment. Am J Psychiatry 1995; 152:183-194.
- Minkoff K, Bergman E, Beck et al: Hopelessness, depression and attempted suicide. Am J Psychiatry 1973; 130:455-459.
- Modestin J, Zarro I, Waldvogel D: A study of suicide in schizophrenic inpatients. Br J Psychiatry 1992; 160:398-401.
- Nicola Hodelet et al. What to do when a patient commits suicide. Psychiatric Bulletin 2001; 25: 43-45.

- Radomsky, Haas, Mann et al: Suicidal behaviors in patients with schizophrenia and other psychotic disorders. Am J psychiatry 1999; 156:1590-1595.
- Roy A: Suicide in chronic schizophrenia. Br J psychiatry 1982; 141:171-177.
- Roy A, Segal NL et al: Suicide in twins. Arch Gen Psychiatry 1991; 48:29-32.
- Roy A, Karoum F, Pollack S: Marked reduction in indexes of dopamine metabolism among patients with depression who attempted suicide. Arch Gen Psychiatry 1992; 49:447-450.
- Steinberg HR, Green R, Durell J: Depression occurring during the course of recovery from schizophrenic symptoms. Am J psychiatry 1967; 124:699-702.
- Ting-Pong Ho: The Suicide Risk of Discharged Psychiatric Patients. J Clin Psychiatry 2003; 64:702-707.
- Tsuang MT. Woolson RF, Fleming JA: Premature deaths in schizophrenia and affective disorders: An analysis of survival curves and variables affecting the shortened survival. Arch Gen Psychiatry 1980; 37:979-983.
- Tsuang MT. Suicide in schizophrenics, manics, depressives and surgical controls. Arch Gen Psychiatry 1978; 35:153-154.
- Virkkunen M: Attitude to psychiatric treatment before suicide I schizophrenia and paranoid psychosis. Br J psychiatry 1976; 13:47-49.
- Van Praag H: CSF, 5-HIAA and suicide in non-depressed schizophrenics. Lancet 1983; 2: 977-978.
- Vanessa Raymont: Suicide in schizophrenia. Psychiatric Bulletin 2001; 25: 46-50.
- Vyas Niraj Ahuja: Textbook of Postgraduate Psychiatry, Psychiatric Emergencies, Volume 2, Sec 7; 34.

APPENDIX – 1

PROFORMA

Name:

Age:

Sex:

Education: Illiterate/ Primary/ Secondary/ SSC/ HSC/ Graduate

Occupation: Unemployed/ Unskilled/ Skilled/ Housewife/ Student

Socio-economic status: Low/ Middle/ High

Marital status: Married/ Unmarried/ Separated/ Divorced

Type of family: Nuclear/ Joint

Family history: Mental illness/ Suicide/ Both

Diagnosis: Paranoid/ Catatonic/ Undifferentiated/ Disorganized/ Other

Duration of illness: < 1 year/ 1-2 years/ 2-5 years/ > 5 years . In months:

Medication details:

Past attempts of suicide: Yes/ No; If yes, details

History of hospitalization for the attempt: Yes/ No; If yes, details

Reason for attempting: Secondary to delusions/ Hallucinations/ Depressive features/ Insight/ Impulsive

Mode of attempt: Overdose/ OPC or other poisoning/ Hanging/ Drowning/ Others

Communication of attempt: Yes/ No; If yes details

APPENDIX – 2

SCALE FOR THE ASSESSMENT OF POSITIVE SYMPTOMS (SAPS)

0 = None 1 = Questionable 2 = Mild 3 = Moderate 4 = Severe

Hallucinations

1. *Auditory hallucinations* – The patient reports voices, or other sounds that no one else hears.
2. *Voices commenting* – The patient reports a voice which makes a running commentary on his behavior or thoughts.
3. *Voices conversing* – The patient reports hearing two or more voices conversing.
4. *Somatic or tactile Hallucinations* – The patient reports experiencing peculiar physical sensations in the body.
5. *Olfactory hallucinations* – The patient reports experiencing unusual smell which no one else notices.
6. *Visual hallucinations* – The patient sees shapes or people that are not actually present.
7. *Global rating of hallucinations* – The rating should be based on the duration and severity of the hallucinations and their effects on the patient's life.

Delusions

8. *Persecutory delusions* – The patient believes he is being conspired against or persecuted in some way.
9. *Delusions of jealousy* – The patient believes his spouse is having an affair with someone.
10. *Delusions of guilt or sin* – The patient believes that he has committed some terrible sin or done something unforgivable.

11. *Grandiose delusions* – The patient believes he has special powers or abilities.
12. *Religious delusions* – The patient is preoccupied with false beliefs of philosophical nature.
13. *Somatic delusions* – The patient believes that somehow his body is diseased, abnormal, or changed.
14. *Delusions of reference* – The patient believes that insignificant remarks or events refer to him or have some special meaning.
15. *Delusion of being controlled* – The patient believes that his feelings or actions are controlled by some outside force.
16. *Delusion of mind reading* – The patient feels that people can read his mind or know his thoughts.
17. *Thought broadcasting* – The patient believes that his thoughts are broadcast so that he himself or others can hear them.
18. *Thought insertion* – The patient believes that thoughts that are not his own have been inserted into his mind.
19. *Thought withdrawal* – The patient believes that thoughts have been taken away from his mind.
20. *Global rating of delusions* – This rating is based on the duration and persistence of the delusions and their effect on the patient's life.

Bizarre behavior

21. *Clothing and appearance* – The patient dresses in an unusual manner or does other strange things to alter his appearance.
22. *Social and sexual behavior* – The patient may do things considered inappropriate according to usual social norms.

23. *Aggressive and agitated behavior* – The patient may behave in an aggressive, agitated manner, often unpredictably.
24. *Repetitive or stereotyped behavior* – The patient develops a set of repetitive actions or rituals that he must perform over and over.
25. *Global rating of bizarre behavior* – The rating should reflect the type of behavior and the extent to which it deviates from social norms.

Positive formal thought disorder

26. *Derailment* – A pattern of speech in which ideas slip off track onto ideas obliquely related or unrelated.
27. *Tangentiality* – Replying to a question in an oblique or irrelevant manner.
28. *Incoherence* – A pattern of speech which is essentially incomprehensible at times.
29. *Illogicality* – A pattern of speech in which conclusions are reached which do not follow logically.
30. *Circumstantiality* – A pattern of speech which is very indirect and delayed in reaching its goal idea.
31. *Pressure of speech* – The patient's speech is rapid and difficult to interrupt; the amount of speech produced is greater than that considered normal.
32. *Distractible speech* – The patient is distracted by nearby stimuli which interrupt his flow of speech.
33. *Clanging* – A pattern of speech in which sounds rather than meaningful relationships govern word of choice.
34. *Global rating of positive formal thought disorder* – This rating should reflect the frequency of abnormality and degree to which it affects the patient's ability to communicate.

Inappropriate affect

35. *Inappropriate affect* – The patient's affect is inappropriate or incongruent, not simply flat or blunted.

APPENDIX - 3

SCALE FOR THE ASSESSMENT OF NEGATIVE SYMPTOMS (SANS)

0 = None 1 = Questionable 2 = Mild 3 = Moderate 4 = Severe

Affective flattening or blunting

1. *Unchanging facial expression* – The patient's face appears wooden, change less than expected as emotional content of discourse changes.
2. *Decreased spontaneous movements* – The patient shows few or no spontaneous movements, does not shift position, move extremities, etc.
3. *Paucity of expressive gesture* – The patient does not use hand gestures, body position, etc., as an aid to expressing his ideas.
4. *Poor eye contact* – The patient avoids eye contact or "stares through" interviewer while speaking.
5. *Affective nonresponsivity* – The patient fails to smile or laugh when prompted.
6. *Lack of vocal inflections* – The patient fails to show normal vocal emphasis patterns, is often monotonic.
7. *Global rating of affective flattening* – This rating should focus on overall severity of symptoms, especially unresponsiveness, eye contact, facial expression, and vocal inflections.

Alogia

8. *Poverty of speech* – The patient's replies to questions are restricted in amount, tend to be brief, concrete, and unelaborated.
9. *Poverty of content of speech* – The patient replies are adequate in amount tend to be vague, over concrete, or over generalized, and convey little information.

10. *Blocking* – The patient indicates, either spontaneously or with prompting, that his train of thoughts was interrupted.
11. *Increased latency of response* – The patient takes a long time to reply to questions, prompting indicates the patient is aware of the question.
12. *Global rating of alogi*a – The core features of alogia are poverty of speech and poverty of content.

Avolition-apathy

13. *Grooming and hygiene* – The patient's clothes may be sloppy or soiled, and he may have greasy hair, body odor, etc.
14. *Impersistence at work or school* – The patient has difficulty seeking or maintaining employment, completing school work, keeping houses, etc. If an inpatient, cannot persist at ward activities, such as occupational therapy, playing cards, etc.
15. *Physical anergia* – The patient tends to be physically inert. He may sit for hours and does not initiate spontaneous activities.
16. *Global rating of avolition-apathy* – Strong weight may be given to one or two prominent symptoms if particularly striking..

Anhedonia-asociality

17. *Recreational interests and activities* – The patient may have few or no interests. Both the quality and quantity of interests should be taken into account.
18. *Sexual activity* – The patient may show a decrease in sexual interest and activity, or enjoyment when active.
19. *Ability to feel intimacy and closeness* – The patient may display an inability to from close or intimate relationships, especially with the opposite sex and family.

20. *Relationships with friends and peers* – The patient may have few or no friends and may prefer to spend all of his time isolated.
21. *Global rating of anhedonia-asociality* – This rating should reflect overall severity, taking into account the patient's age, family status, etc.

Attention

22. *Social inattentiveness* – The patient appears uninvolved or unengaged. He may seem spacey.
23. *Inattentiveness during mental testing* – Tests of "serial 7s" (at least five subtractions backwards) and spelling word backwards: score: 2 = 1error; 3 = 2 error; score 4 = 3 errors.
24. *Global rating of attention* – This rating should assess the patient's overall concentration, clinically and on tests.

APPENDIX – 4

THE CALGARY DEPRESSION SCALE FOR SCHIZOPHRENIA (CDSS)

1. Depression: How would you describe your mood over the last two weeks?

Do you keep reasonably cheerful or have you been very depressed or low spirited recently? In the last two weeks how often have you (own words) every day? All day?

0. Absent

1. Mild - Expresses some sadness or discouragement on questioning.

2. Moderate - Distinct depressed mood persisting up to half the time over last 2 weeks: present daily.

3. Severe - Markedly depressed mood persisting daily over half the time interfering with normal motor and social functioning.

2. *Hopelessness*: How do you see the future for yourself? Can you see any future? Or has life seemed quite hopeless? Have you given up or does there still seem some reason for trying

0. Absent

1. Mild - Has at times felt hopeless over the last two weeks but still has some degree of hope for the future.

2. Moderate - Persistent, moderate sense of hopelessness over last week. Can be persuaded to acknowledge possibility of things being better.

3. Severe - Persisting and distressing sense of hopelessness.

3. *Self depreciation*: What is your opinion of your self compared to other people? Do you feel better, not as good, or about the same as other? Do you feel inferior or even worthless?

0. Absent

1. Mild - Some inferiority; not amounting to feeling of worthlessness.

2. Moderate - Subject feels worthless, but less than 50% of the time.

3. Severe - Subject feels worthless more than 50% of the time. May be challenged to acknowledge otherwise.

4. *Guilty ideas of reference*: Do you have the feeling that you are being blamed for something or even wrongly accused? What about? (Do not include justifiable blame or accusation. Exclude delusions of guilt.)

0. Absent

1. Mild - Subject feels blamed but not accused less than 50% of the time.

2. Moderate - Persisting sense of being blamed, and/or occasional sense of being accused.

3. Severe - Persistent sense of being accused. When challenged, acknowledges that it is not so.

5. *Pathological guilt*: Do you tend to blame yourself for little things you may have done in the past? Do you think that you deserve to be so concerned about this?

0. Absent

1. Mild - Subject sometimes feels over guilty about some minor peccadillo, but less than 50% of time.

2. Moderate - Subject usually (over 50% of time) feels guilty about past actions the significance of which he exaggerates.

3. Severe - Subject usually feels s/he is to blame for everything that has gone wrong, even when not his/her fault.

6. ***Morning depression***: When you have felt depressed over the last 2 weeks have you noticed the depression being worse at any particular time of day?

0. Absent - No depression.

1. Mild - Depression present but no diurnal variation.

2. Moderate - Depression spontaneously mentioned to be worse in a.m.

3. Severe - Depression markedly worse in a.m., with impaired functioning which improves in p.m.

7. ***Early wakening***: Do you wake earlier in the morning than is normal for you? How many times a week does this happen?

0. Absent - No early wakening.

1. Mild - Occasionally wakes (up to twice weekly) 1 hour or more before normal time to wake or alarm time.

2. Moderate - Often wakes early (up to 5 times weekly) 1 hour or more before normal time to wake or alarm.

3. Severe - Daily wakes 1 hour or more before normal time.

8. ***Suicide***: Have you felt that life wasn't worth living? Did you ever feel like ending it all? What did you think you might do? Did you actually try?

0. Absent

1. Mild - Frequent thoughts of being better off dead, or occasional thoughts of suicide.

2. Moderate - Deliberately considered suicide with a plan, but made no attempt.

3. Severe - Suicidal attempt apparently designed to end in death (i.e. accidental discovery of inefficient means).

9. *Observed depression*: Based on interviewer's observations during the entire interview. The question "Do you feel like crying?" used at appropriate points in the interview, may elicit information useful to this observation.

0. Absent

1. Mild - Subject appears sad and mournful even during parts of the interview, involving affectively neutral discussion.

2. Moderate - Subject appears sad and mournful throughout the interview, with gloomy monotonous voice and is tearful or close to tears at times.

3. Severe - Subject chokes on distressing topics, frequently sighs deeply and cries openly, or is persistently in a state of frozen misery if examiner is sure that this is present.

APPENDIX - 5

SUICIDE INTENT SCALE

OBJECTIVE CIRCUMSTANCES RELATED TO SUICIDE ATTEMPT

1. *Isolation*
    1. Somebody present
    2. Somebody nearby, or in visual or vocal contact
    3. No one nearby or in visual or vocal contact
2. *Timing*
    1. Intervention is probable
    2. Intervention is not likely
    3. Intervention is highly unlikely
3. *Precautions against discovery/intervention*
    1. No precautions
    2. Passive precautions (as avoiding other but doing nothing to prevent their intervention; alone in room with unlocked door)
    3. Active precautions (as locked door)
4. *Acting to get help during/after attempt*
    1. Notified potential helper regarding attempt
    2. Contacted but did not specifically notify potential helper regarding attempt
    3. Did not contact or notify potential helper

5. *Final acts in anticipation of death (will, gifts, insurance)*
    1. None
    2. Thought about or made some arrangements
    3. Made definite plans or completed arrangements
6. *Active preparation for attempt*
    1. None
    2. Minimal to moderate
    3. Extensive
7. *Suicide Note*
    1. Absence of note
    2. Note written, but torn up; note thought about
    3. Presence of note
8. *Overt communication of intent before the attempt*
    1. None
    2. Equivocal communication
    3. Unequivocal communication

SELF REPORT

9. *Alleged purpose of attempt*
    1. To manipulate environment, get attention, get revenge
    2. Components of above and below
    3. To escape, surcease, solve problems
10. *Expectations of fatality*
    1. Thought that death was unlikely
    2. Thought that death was possible but not probable

3. Thought that death was probable or certain

11. Conception of method's lethality

1. Did less to self than s/he thought would be lethal
2. Wasn't sure if what s/he did would be lethal
3. Equaled or exceeded what s/he thought would be lethal

12. Seriousness of attempt

1. Did no seriously attempt to end life
2. Uncertain about seriousness to end life
3. Seriously attempted to end life

13. Attitude toward living/dying

1. Did not want to die
2. Components of above and below
3. Wanted to die

14. Conception of medical rescuability

1. Thought that death would be unlikely if he received medical attention
2. Was uncertain whether death could be averted by medical attention
3. Was certain of death even if he received medical attention

15. Degree of premeditation

1. None; impulsive
2. Suicide contemplated for three hours of less prior to attempt
3. Suicide contemplated for more than three hours prior to attempt

APPENDIX – 6

CONSENT FORM

I, the undersigned have been explained the following in the language I understand.

1. I am participating in the study with my own wish.

2. The purpose of this study is to find further information regarding the causes, risk factors and psychopathology of suicide in schizophrenia.

3. The finding of this study can be used in a thesis or research paper.

4. Individual information will be kept confidential.

Name and signature or patient

Name and sign of relative

Name and sign of witness